

DEPARTMENT OF RAILWAYS AND CANALS

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# CANAL STATISTICS

FOR THE

SEASON OF NAVIGATION

1916

*PRINTED BY ORDER OF PARLIAMENT*



OTTAWA

PRINTED BY J. DE L. TACHÉ  
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY

1917







*To His Excellency the Duke of Devonshire, K.G., P.C., G.C.M.G., G.C.V.O., etc.,  
etc., Governor General and Commander in Chief of the Dominion of Canada.*

MAY IT PLEASE YOUR EXCELLENCY,—

The undersigned has the honour to present to Your Excellency, Canal Statistics for the year ended December 31, 1916.

All of which is respectfully submitted.

F. COCHRANE,

*Minister of Railways and Canals.*







To the Honourable F. COCHRANE,

Minister of Railways and Canals.

SIR,—I have the honour to submit the annual report of the Comptroller of Statistics in relation to the operations of the Canals of the Dominion for the year ended December 31, 1916.

I have the honour to be, sir,

Your obedient servant,

A. W. CAMPBELL,

*Deputy Minister of Railways and Canals.*







OFFICE OF THE COMPTROLLER OF STATISTICS,  
OTTAWA, February 20, 1917.

A. W. CAMPBELL, Esq., C.E.,  
Deputy Minister of Railways and Canals.

SIR,—I have the honour to submit herewith Canal Statistics for the year ended December 31, 1916.

Traffic through the canals of Canada in 1916 showed an increase of 8,384,688 tons. The volume was 23,583,491 tons. Distribution of traffic:—

	Tons.	Increase.	Decrease.
	Tons.	Tons.	Tons.
Sault Ste. Marie.....	16,813,649	9,062,692	
Welland.....	2,544,964		516,048
St. Lawrence.....	3,368,064		41,403
Chambly.....	398,977		79,730
St. Peter's.....	9,629	6,734	
Murray.....	46,680	15,952	
Ottawa.....	237,651		34,719
Rideau.....	105,430		15,351
Trent.....	45,009		4,895
St. Andrew's.....	13,438		8,544
Total.....	23,583,491	9,085,378	700,690

## Gross traffic since 1905:—

	Tons.
1905.....	9,371,744
1906.....	10,523,185
1907.....	20,543,639
1908.....	17,502,820
1909.....	33,720,748
1910.....	42,990,608
1911.....	38,030,353
1912.....	47,587,245
1913.....	52,053,913
1914.....	37,023,237
1915.....	15,198,803
1916.....	23,583,491



Comparison of 1915 and 1916 by months:

—	Sault Ste. Marie.	Welland.	St. Lawrence.	Chambly.	Ottawa.	Rideau.	St. Peters.	Murray.	Trent.	St. Andrews.	Total.
1915.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
April.....	115,684	170,343	97,090	7,724	4,472	.....	728	2,200	109	.....	398,350
May.....	318,488	450,178	523,260	65,675	38,195	21,367	1,988	1,925	4,359	1,370	1,426,805
June.....	371,484	441,911	507,289	79,571	32,989	24,171	179	4,194	10,459	423	1,472,670
July.....	552,410	396,012	459,515	84,897	56,265	19,371	.....	3,962	13,554	1,625	1,587,611
August.....	787,770	427,962	508,199	74,627	37,512	10,810	.....	4,076	8,045	9,020	1,829,021
September.....	1,390,240	425,272	457,765	69,096	49,886	15,291	.....	4,685	5,082	7,400	2,424,717
October.....	2,271,098	425,636	522,425	60,412	40,503	19,501	.....	6,982	6,128	2,144	3,354,829
November.....	1,634,451	268,961	311,480	36,705	12,548	10,270	.....	1,704	2,126	.....	2,278,245
December.....	348,332	54,737	22,444	.....	.....	.....	.....	1,000	42	.....	426,555
Total.....	7,750,957	3,061,012	3,409,467	478,707	272,370	120,781	2,895	30,728	49,904	21,982	15,198,803
1916.											
April.....	390,152	46,702	34,764	110	1,432	.....	.....	1,550	.....	.....	474,710
May.....	2,129,714	333,442	423,289	24,213	33,383	17,917	.....	4,798	625	525	2,967,906
June.....	3,176,701	381,250	541,407	56,011	45,596	7,460	.....	4,051	8,700	1,162	4,233,338
July.....	2,630,899	390,119	491,238	69,638	41,256	15,295	.....	5,055	11,590	20	3,655,110
August.....	2,530,062	416,282	552,020	70,305	30,695	14,316	.....	11,531	11,646	6,579	3,643,436
September.....	2,376,527	327,303	480,672	67,093	29,465	13,188	.....	11,065	8,724	4,737	3,318,774
October.....	1,833,234	349,134	448,358	62,431	33,418	18,645	.....	6,420	2,757	415	2,754,812
November.....	1,261,836	248,350	368,003	49,176	22,406	8,609	5,614	2,210	964	.....	1,967,168
December.....	484,524	52,382	28,313	.....	.....	.....	4,015	.....	3	.....	569,237
Total.....	16,813,649	2,544,964	3,368,064	398,977	237,651	105,430	9,629	46,680	45,009	13,438	23,584,491



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Following is a summary of traffic, by months, during the past five years:—

—	1912.	1913.	1914.	1915.	1916.
	Tons.	Tons.	Tons.	Tons.	Tons.
January.....	181	397	494	.....	.....
April.....	77,871	875,226	554,111	398,350	474,710
May.....	6,134,122	7,260,227	5,307,123	1,426,805	2,967,906
June.....	6,851,248	7,647,189	6,136,657	1,472,670	4,232,338
July.....	7,054,060	8,137,169	6,339,831	1,587,611	3,655,110
August.....	7,159,871	7,625,782	6,261,380	1,829,021	3,643,436
September.....	6,983,913	7,531,379	6,069,946	2,424,717	3,318,774
October.....	7,321,846	7,350,914	4,660,484	3,354,829	2,754,812
November.....	5,369,493	4,891,143	1,470,471	2,278,245	1,967,168
December.....	634,640	734,487	222,740	426,555	569,237
Total.....	47,587,245	52,053,913	37,023,237	15,198,803	23,583,491

The following further summary gives the record of traffic, by canals, for 1911 and succeeding years:—

—	1911.	1912.	1913.	1914.	1915.	1916.
Sault Ste. Marie.....	30,951,709	39,669,655	42,699,324	27,599,184	7,750,957	16,813,649
Welland.....	2,537,629	2,851,915	3,570,714	3,860,969	3,061,012	2,544,964
St. Lawrence.....	3,105,708	3,477,188	4,302,427	4,391,493	3,409,467	3,368,064
Chambly.....	599,829	618,415	555,602	436,905	478,707	398,977
St. Peters.....	75,298	74,809	71,514	54,180	2,895	9,629
Murray.....	163,457	170,081	180,576	83,907	30,728	46,680
Ottawa.....	320,071	392,350	365,438	335,132	272,370	237,651
Rideau.....	172,227	160,133	171,223	151,739	120,781	105,430
Trent.....	57,290	77,150	55,800	67,715	49,904	45,009
St. Andrews.....	47,135	95,549	81,295	42,013	21,982	13,438

Eliminating all duplications, the net tonnage for 1916 is shown in the following table:—

Canals.	Canadian.	United States.	Net Tonnage.	Gross Tonnage
	Tons.	Tons.	Tons.	
Sault Ste. Marie.....	4,061,845	12,652,401	16,714,246	16,813,649
Welland.....	547,629	1,462,965	2,010,594	2,544,964
St. Lawrence.....	790,087	852,359	1,642,446	3,368,064
Chambly.....	214,646	141,996	346,642	398,977
Ottawa.....	77,791	.....	77,791	237,651
Rideau.....	105,430	.....	105,430	105,430
St. Peters.....	9,629	.....	9,629	9,629
Trent.....	45,009	.....	45,009	45,009
Murray.....	45,085	1,595	46,680	46,680
St. Andrews.....	13,438	.....	13,438	13,438
Total.....	5,910,589	15,101,316	21,011,905	23,583,491



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The traffic of 1915 and 1916 is analyzed by classes of commodities in the following tabular statement:—

Canals.	Agricultural Products.	Animal Products.	Manu- factures.	Products of Forest.	Products of Mines.	Total.
1915.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Sault Ste. Marie.....	2,655,789	655	441,293	89,218	4,564,002	7,750,957
Welland.....	1,306,803	1	320,442	308,660	1,125,106	3,061,012
St. Lawrence.....	1,204,523	4,685	276,713	601,255	1,322,291	3,409,467
Chambly.....	7,163	784	21,605	280,117	169,038	478,707
St. Peters.....	381	10	322	179	2,003	2,895
Murray.....	153	271	6,523	.....	23,781	30,728
Ottawa.....	4,202	2,889	16,089	155,669	93,521	272,370
Rideau.....	1,521	1,690	10,186	10,211	97,173	120,781
Trent.....	1,990	299	2,751	44,575	289	49,904
St. Andrews.....	.....	5	187	4,894	16,896	21,982
Total.....	5,182,525	11,289	1,096,111	1,494,778	7,414,100	15,198,803
1916.						
Sault Ste. Marie.....	3,803,289	522	373,664	39,245	12,596,929	16,813,649
Welland.....	693,578	.....	184,779	265,563	1,401,044	2,544,964
St. Lawrence.....	660,555	4,459	211,530	650,590	1,840,930	3,368,064
Chambly.....	10,134	210	19,679	242,654	126,300	398,977
St. Peters.....	4,518	330	964	30	3,787	9,629
Murray.....	60	.....	9,738	2	36,880	46,680
Ottawa.....	3,383	2,940	20,168	139,168	71,992	237,651
Rideau.....	523	2,583	10,754	9,912	81,658	105,430
Trent.....	2,766	298	2,776	38,841	328	45,009
St. Andrews.....	.....	.....	214	2,868	10,356	13,438
Total.....	5,178,806	11,342	834,266	1,388,873	16,170,204	23,583,491

	Increase. Tons.	Decrease. Tons.	Increase. Per cent.	Decrease. Per cent.
Sault Ste. Marie.....	9,062,692	.....	116.92	.....
Welland.....	.....	516,048	.....	16.85
St. Lawrence.....	.....	41,403	.....	1.21
Chambly.....	.....	79,730	.....	16.66
St. Peters.....	6,734	.....	232.61	.....
Murray.....	15,952	.....	51.91	.....
Ottawa.....	.....	34,719	.....	12.74
Rideau.....	.....	15,851	.....	12.71
Trent.....	.....	4,895	.....	9.80
St. Andrews.....	.....	8,544	.....	38.80
Net Increase.....	9,085,378	700,690	.....	.....

The following statement shows the tonnage of commodities by classes moved through all the canals in 1916:—

	Tons.
Agricultural products.....	5,178,806
Animal products.....	11,342
Manufactures.....	834,266
Products of the forest.....	1,388,873
Products of the mine.....	16,170,204
Total.....	23,583,491



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	1911.	1912.	1913.	1914.	1915.	1916.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Agricultural products.....	14.2	14.51	16.40	21.51	34.11	21.96
Animal products.....	.1	.04	.04	.04	.07	.04
Manufactures.....	6.2	4.68	3.61	3.29	7.21	3.53
Products of forest.....	4.0	3.43	3.22	4.38	9.83	5.87
Products of mine.....	75.5	77.34	76.73	70.78	48.78	68.60

CANADIAN AND AMERICAN TRAFFIC.

Neither the canals of Canada nor those of the United States impose tolls. Perfect reciprocity prevails in the use of these artificial waterways.

Comparison of traffic:—

Year.	Canadian Vessels.		U. S. Vessels.		Freight Tonnage.		
	No.	Tonnage.	No.	Tonnage.	Canadian.	United States.	Total.
1908.....	29,040	6,780,789	7,489	4,835,320	5,012,147	12,190,673	17,502,820
1909.....	22,507	7,811,578	9,996	16,459,322	7,378,057	26,342,691	33,720,748
1910.....	25,337	8,931,790	11,462	21,777,297	7,883,614	35,106,994	42,990,608
1911.....	25,585	9,172,192	10,370	18,231,622	7,792,907	30,237,446	38,030,353
1912.....	27,371	10,237,335	11,785	24,636,190	9,376,529	38,210,716	47,587,245
1913.....	28,654	12,078,041	10,739	24,238,788	11,130,875	40,923,038	52,053,913
1914.....	26,125	12,050,856	7,742	15,636,414	9,382,206	27,641,031	37,023,237
1915.....	21,575	9,398,207	6,415	7,385,101	6,789,423	8,409,380	15,198,803
1916.....	23,002	9,839,029	6,800	10,660,839	7,486,962	16,096,529	23,583,491

Relative percentage of freight tonnage:—

Year.	Canadian Per Cent.	American Per Cent.
1908.....	28.7	71.3
1909.....	21.8	78.2
1910.....	18.3	81.7
1911.....	20.5	79.5
1912.....	19.7	80.3
1913.....	21.3	78.7
1914.....	25.3	74.7
1915.....	44.7	55.3
1916.....	31.7	68.3

Although the percentage of Canadian traffic in 1916 declined, the volume was actually larger than in 1915. Adding together the net tonnage of Canadian freight which passed through the canals of the United States and of Canada, the result is as follows:—

	Net Canadian Tonnage.
1915.....	6,734,223
1916.....	9,779,881



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The volume of gross freight tonnage Canadian and American, through all the canals of Canada was as follows in 1916:—

Canals.	Total Traffic.	Canadian Tons.	Per Cent.	American Tons.	Per Cent.
Sault Ste. Marie .....	16,813,649	4,155,911	24.72	12,657,738	75.28
Welland.....	2,544,964	1,054,480	45.43	1,490,484	54.57
St. Lawrence.....	3,368,064	1,581,195	46.95	1,786,869	53.05
Chambly.....	398,977	257,181	64.47	141,796	35.53
St. Peters.....	9,629	9,629	100.00		
Murray.....	46,680	45,085	96.58	1,595	3.42
Ottawa.....	237,651	226,381	95.25	11,270	4.75
Rideau.....	105,430	98,653	93.57	6,777	6.43
Trent.....	45,009	45,009	100.00		
St. Andrews.....	13,438	13,438	100.00		
	23,583,491	7,486,962		16,096,529	

The foregoing tonnage unavoidably includes duplication. It represents the total of business through all the canals, and the same cargo often passes through two and three separate canal systems. This is always true of through shipments in either direction between the head of lake Superior and Montreal.

The eastward movement of traffic is very much larger than the movement westward, and this fact gives Sault Ste. Marie a controlling position. In that eastward trend of trade iron ore is the chief commodity. Following is a comparative statement of eastbound business, including ore:—

Canadian Canal.	Total Traffic.	Canadian Traffic.	Per cent Canadian.	American Traffic.	Per cent American
1896 .....	4,557,399	321,770	7.0	4,255,629	93.0
1897.....	4,974,063	337,146	6.8	4,609,737	93.2
1898.....	3,055,287	146,539	4.8	2,908,748	95.2
1899.....	3,006,664	299,975	9.9	2,706,629	90.1
1900.....	2,035,677	255,264	12.5	1,880,413	87.5
1901.....	2,820,394	494,613	17.5	2,325,781	82.5
1902.....	4,729,268	1,140,623	24.1	3,588,645	75.9
1903.....	5,511,868	1,362,820	24.7	4,149,048	75.3
1904.....	5,030,705	1,212,145	24.1	3,818,360	75.9
1905.....	5,473,406	1,304,355	23.8	4,169,051	76.2
1906.....	6,574,046	1,632,683	24.8	4,941,363	75.2
1907.....	15,588,165	1,957,334	12.5	13,630,831	87.5
1908.....	12,759,216	2,113,160	16.5	10,646,056	83.5
1909.....	27,861,245	2,767,875	9.1	25,093,370	90.9
1910.....	36,395,687	2,941,229	8.1	33,454,458	91.9
1911.....	30,951,709	3,167,936	10.2	27,783,773	89.8
1912.....	39,669,655	3,808,157	9.6	35,861,498	90.4
1913.....	42,699,324	3,816,718	11.3	37,882,606	88.7
1914.....	27,599,184	3,609,747	13.1	23,989,437	86.9
1915.....	7,750,957	2,561,734	33.0	5,189,223	67.0
1916.....	16,813,649	4,155,911	24.7	12,657,738	75.3



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The important part played by ore shipments is shown in the following table:—

Year.	American Traffic through Canadian Canal.			Ore included in foregoing total.	Per cent of Ore.	Commodities other than Ore.	Per cent of other Commodities.
	Up.	Down.	Total.				
	Tons.	Tons.	Tons.	Tons.		Tons.	
1905	1,028,871	3,140,180	4,169,051	2,910,118	69.9	1,258,933	30.1
1906	1,367,796	3,573,567	4,941,363	2,929,366	59.3	1,011,997	40.7
1907	2,604,741	11,026,090	13,630,831	9,995,242	73.2	3,635,589	26.8
1908	2,419,709	8,226,347	10,646,056	7,362,351	69.1	3,283,705	30.9
1909	2,737,101	22,356,269	25,093,370	21,156,915	84.3	3,936,455	15.7
1910	4,004,538	29,449,920	33,454,458	28,440,952	85.0	5,013,506	15.0
1911	4,307,187	23,476,586	27,783,773	22,654,029	81.5	5,129,744	18.5
1912	3,133,638	32,727,860	35,861,498	31,134,251	87.0	4,727,247	13.0
1913	4,238,829	33,643,777	37,882,606	32,386,866	85.5	5,495,740	14.5
1914	2,398,944	21,737,678	24,136,622	20,817,953	86.2	3,318,669	13.8
1915	509,788	4,741,552	5,251,340	4,004,426	76.3	1,246,914	23.7
1916	1,088,832	11,608,897	12,697,729	11,374,201	89.5	1,323,528	10.5

Following is a comparison of eastbound Canadian and American traffic at Sault Ste. Marie, exclusive of ore:—

Year.	Canadian Eastbound exclusive of ore.	Per cent of total eastbound	American Eastbound exclusive of ore.	Per cent. of total Eastbound
1905	838,537	82.7	303,630	9.7
1906	1,112,742	92.8	721,320	20.2
1907	1,446,788	91.7	1,142,468	10.3
1908	1,585,549	92.3	986,614	11.9
1909	2,038,245	98.0	1,229,282	5.5
1910	2,132,620	100.0	962,062	3.3
1911	2,466,806	99.1	820,488	3.5
1912	3,019,998	99.8	1,576,646	4.8
1913	4,114,402	99.0	1,271,882	3.8
1914	2,985,114	97.1	919,725	4.2
1915	2,134,546	97.1	737,126	15.5
1916	3,697,705	96.7	194,576	1.68

The foregoing percentages represent the proportion which Eastbound traffic, excluding ore, bore to the total Eastbound, including ore.



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At the Welland canal ores disappear as a factor in traffic. The situation at that important gateway between the upper Great Lakes and the St. Lawrence is summarized in the following statement:—

TRAFFIC THROUGH THE WELLAND CANAL.

Year.	Canadian— Up.	Per cent.	Canadian— Down.	Per cent.	United States— Up.	Per cent.	United States— Down.	Per cent.
	Tons.		Tons.		Tons.		Tons.	
1887.....	61,310	41.3	87,159	58.7	265,738	31.9	565,928	68.1
1891.....	25,260	25.8	72,522	74.2	264,952	30.2	612,279	69.8
1896.....	19,369	8.8	200,294	91.2	271,900	25.6	788,424	74.4
1897.....	12,091	6.3	179,998	93.7	212,108	19.6	870,095	80.4
1898.....	11,904	8.5	127,236	91.5	211,502	21.1	789,435	78.9
1899.....	17,464	10.2	153,174	89.8	135,038	21.8	484,094	78.2
1900.....	18,670	11.0	150,378	89.0	99,560	18.1	450,752	81.9
1901.....	22,804	10.2	200,693	89.8	83,601	21.1	313,111	78.9
1902.....	39,760	16.2	204,398	83.8	44,994	10.7	376,235	89.3
1903.....	116,143	34.6	220,152	65.4	153,947	23.1	512,677	76.9
1904.....	94,353	27.1	253,920	72.9	90,855	19.6	372,243	80.4
1905.....	104,490	24.6	319,944	75.4	127,569	19.1	540,047	80.9
1906.....	131,502	24.2	410,749	75.8	91,366	13.8	568,350	85.2
1907.....	202,051	29.6	479,292	70.4	188,113	20.1	744,676	79.9
1908.....	163,447	21.7	587,239	78.3	247,513	25.9	705,254	74.1
1909.....	382,041	37.5	635,187	62.5	260,048	25.7	748,675	74.3
1910.....	420,407	35.9	749,891	64.1	304,427	26.3	851,565	73.7
1911.....	508,865	38.0	828,085	62.0	335,054	27.8	866,625	72.2
1912.....	578,251	37.1	979,525	62.9	247,471	19.1	1,046,668	80.9
1913.....	641,402	32.4	1,338,274	67.6	363,701	22.9	1,227,337	77.1
1914.....	504,487	22.2	1,769,502	77.8	351,562	22.2	1,235,418	77.8
1915.....	422,996	27.6	1,108,332	72.4	333,464	21.8	1,196,220	78.2
1916.....	350,225	34.1	678,339	65.9	149,396	9.8	1,367,004	90.2

TRANSPORTATION OF CANADIAN WHEAT.

The total volume of Canadian wheat moved through the canals of Canada and the United States at Sault Ste. Marie in 1916 was 185,003,667 bushels. Of this quantity, 82,807,342 bushels passed through the Canadian canal. Larger accommodation on the American side of the St. Mary's river probably accounts for the preference given that channel.

Since 1895 the volume of Canadian wheat annually carried through the Canadian canal at Sault Ste. Marie has been as follows:—

	Bushels.
1895.....	1,087,800
1896.....	7,274,000
1897.....	9,130,167
1898.....	3,456,934
1899.....	7,699,267
1900.....	5,573,267
1901.....	5,893,034
1902.....	19,896,900
1903.....	25,807,800
1904.....	25,250,969
1905.....	22,603,500
1906.....	26,361,400
1907.....	34,602,000
1908.....	41,793,300
1909.....	48,047,833
1910.....	51,774,833
1911.....	63,641,000
1912.....	83,743,034
1913.....	101,066,133
1914.....	77,467,833
1915.....	48,727,911
1916.....	82,807,342



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Comparison of 1915 and 1916:—

	1915.	1916.
	Bushels.	Bushels.
Through the Canadian canal.....	48,727,911	82,807,342
Through the American canal.....	121,389,950	102,196,325
Total.....	170,117,861	185,003,667

Canadian wheat moved in the form of flour must also be brought into the account. The total quantity brought down in 1916 was 3,805,384 barrels, as compared with 2,215,098 barrels in 1915. At 4½ bushels to the barrel, this would represent 17,124,228 bushels of wheat.

The total volume of waterborne wheat in 1916 would thus be made up as follows:—

	Bushels.
Through the Canadian canal.....	82,807,342
Through the American canal.....	102,196,325
In the form of flour.....	17,124,228
Total.....	202,127,895

The distribution of Canadian wheat, moved through the Canadian and American canals at Sault Ste. Marie from Port Arthur-Fort William, was as follows:—

From	1914.	1915.	1916.
Port Arthur-Fort William.	Bushels.	Bushels.	Bushels.
To Montreal.....	9,624,600	3,512,410	1,233,982
" Georgian Bay ports.....	21,086,566	25,065,999	46,406,749
" other Canadian ports.....	33,132,733	33,067,613	28,029,847
" Buffalo.....	24,974,767	106,784,542	106,349,943
Total.....	88,818,666	168,430,564	182,020,521

To account for all the Canadian wheat shipped eastward by water in 1916 there must be added the quantity passed through Duluth in bond. The complete statement would therefore be as follows:—

From	1914.	Per cent.	1915.	Per cent.	1916.	Per cent.
Port Arthur-Fort William and Duluth.	Bushels.		Bushels.		Bushels.	
To Montreal.....	10,283,166	10.8	4,025,010	2.4	1,686,482	0.19
" Georgian Bay ports.....	24,864,466	26.2	25,315,999	14.9	48,007,361	25.95
" other Canadian ports.....	34,350,700	36.2	33,067,613	19.4	28,029,847	15.15
" Buffalo.....	25,533,734	26.8	107,709,239	63.3	107,279,977	57.99
Total.....	95,032,066		170,117,861		185,003,667	



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“Other Canadian ports” in the foregoing and succeeding statements must be understood as being ports between Georgian bay and lake Ontario. For more than ninety per cent of the traffic the term means Port Colborne, which is the chief port of transfer at the eastern end of lake Erie and the western entrance to the Welland canal.

Following is a summary of the volume moved in 1909 and succeeding years through both canals at Sault Ste. Marie:—

Canadian Wheat.	1909.	1910.	1911.	1912.
	Bushels.	Bushels.	Bushels.	Bushels.
Fort William to Montreal.....	10,517,266	13,185,370	12,761,666	14,929,099
“ “ Georgian bay.....	13,384,400	12,753,200	9,881,234	19,501,168
“ “ other Canadian ports.....	10,149,633	9,603,400	11,880,666	20,458,700
“ “ Buffalo.....	12,841,334	15,693,363	27,945,600	44,228,266
Duluth to Montreal.....	520,000	315,000		283,500
“ Buffalo.....	528,200	224,500	710,334	5,714,367
“ Georgian bay.....	28,000		461,500	1,418,767
“ other Canadian ports.....	79,000			230,000
Unclassified.....				3,078,164
Total.....	48,047,833	51,774,833	63,641,000	109,842,031
Through American canal.....	9,117,328	5,321,446	1,981,481	
Grand total.....	57,165,161	57,096,279	65,622,481	

Canadian Wheat.	1913.	1914.	1915.	1916.
	Bushels.	Bushels.	Bushels.	Bushels.
Fort William to Montreal.....	11,950,433	9,624,600	3,512,410	1,233,982
“ “ Georgian bay.....	24,448,134	21,086,566	25,065,999	46,406,749
“ “ other Canadian ports.....	28,045,733	33,132,733	23,067,613	28,029,847
“ “ Buffalo.....	67,701,900	24,974,767	106,784,542	106,349,943
Duluth to Montreal.....	3,236,199	658,566	512,600	452,500
“ Buffalo.....	3,811,033	3,777,900	250,000	930,034
“ Georgian bay.....	1,605,867	1,217,967		1,600,612
“ other Canadian ports.....	927,600	558,967	924,697	
Unclassified.....				
Total.....	141,726,899	95,032,066	170,117,861	185,003,667



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## Wheat movement by months, 1915 and 1916:

1915.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<i>Canadian Canal—</i>										
Fort William—Port Arthur to—										
Montreal	964,450	229,422	176,000	363,200	300,000	399,138	550,700	37,000	30,000	3,049,910
Georgian bay	120,000	163,870	521,473	540,688	881,071	1,860,430	3,740,811	4,427,773	2,465,356	14,731,466
Other Canadian ports	428,000	1,561,371	1,017,500	594,000	634,000	2,446,724	3,657,940	5,883,500	2,487,500	16,510,535
Buffalo		340,000	188,200	317,850		992,594	5,390,272	4,744,604	1,695,500	13,690,000
Duluth—Superior to—										
Montreal						250,000				250,000
Georgian bay										
Other Canadian ports										
Buffalo						87,000	350,000	80,000		517,000
Total	1,512,450	2,294,663	1,903,173	1,615,718	1,815,071	6,035,886	13,689,723	13,182,877	6,678,350	48,727,911
<i>American Canal—</i>										
Fort William—Port Arthur to—										
Montreal	111,000	306,500		45,000		574,941	4,222,493	3,581,000	1,211,000	462,500
Georgian bay	307,500	83,200	34,399	320,000			2,926,196	1,976,000	1,180,245	10,334,333
Other Canadian ports	2,689,000	4,621,637	963,000	756,000	165,000	1,280,000	25,717,061	31,685,181	24,764,920	16,557,078
Buffalo	3,635,691	1,838,378	415,400	540,465	204,000	4,314,446				93,115,542
Duluth—Superior to—										
Montreal	47,000	145,000	75,300				98,500	146,800		512,600
Georgian bay										
Other Canadian ports										
Buffalo						154,500		41,000	212,197	407,697
Total	6,790,191	6,994,715	1,488,099	1,661,465	369,000	6,323,887	32,964,250	37,429,981	27,568,362	121,380,950
<i>Canadian and American Canals—</i>										
Fort William—Port Arthur to—										
Montreal	1,075,450	535,922	176,000	408,200	300,000	399,138	550,700	37,000	30,000	3,512,410
Georgian bay	427,500	247,070	555,872	860,688	881,071	2,435,371	7,963,304	8,018,773	3,676,350	25,065,999
Other Canadian ports	3,117,000	6,183,008	1,980,500	1,150,000	799,000	3,726,724	6,584,136	5,859,500	3,667,745	33,067,613
Buffalo	3,635,691	2,178,378	603,600	858,295	204,000	5,304,040	31,107,333	36,429,785	26,460,420	106,784,542
Duluth—Superior to—										
Montreal	47,000	145,000	75,300			250,000	98,500	146,800		512,600
Georgian bay										250,000
Other Canadian ports										
Buffalo						241,500	350,000	121,000	212,197	924,697
Total	8,302,641	9,289,378	3,391,272	3,277,183	2,184,071	12,359,773	46,653,973	50,612,858	34,046,712	179,117,861



Wheat movement by months, 1915 and 1916:—Concluded.

1916.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
<i>Canadian Canal—</i>										
Fort William-Port Arthur to—										
Montreal.	192,000	372,950	342,866	41,500	83,066	84,300	3,998,285	117,300	892,000	1,232,982
Georgian bay.	1,507,250	5,631,220	3,937,300	4,730,000	6,236,900	3,029,300	2,805,600	4,330,200	1,399,600	34,295,555
Other Canadian ports.	486,300	4,173,666	3,608,660	2,807,940	3,303,444	2,827,137	2,573,000	802,800	1,341,850	24,315,347
Buffalo.	1,807,784	3,288,758	2,432,000	4,583,130	2,808,336	1,838,800	2,573,000	802,800	1,341,850	21,476,548
Duluth-Superior to—										
Montreal.		75,000								75,000
Georgian bay.		345,000						891,000		1,236,000
Other Canadian ports.										
Buffalo.		175,000								175,000
Total	2,993,334	14,061,594	10,320,826	12,222,570	12,431,746	7,779,537	9,376,885	8,984,400	3,636,450	82,807,342
<i>American Canal</i>										
Fort William-Port Arthur to—										
Montreal.	1,723,000	2,092,700	1,341,500	1,600,724	1,570,828	828,000	1,122,200	1,794,542	37,700	12,111,194
Georgian bay.		1,262,000	580,000	547,000	205,000		358,000	472,500	209,000	3,714,500
Other Canadian ports.	9,746,280	13,266,109	9,437,171	12,277,541	7,450,801	2,641,620	5,322,049	10,964,907	13,767,007	84,873,485
Buffalo.										
Duluth-Superior to—										
Montreal.		152,000	225,500							377,500
Georgian bay.		264,612								364,612
Other Canadian ports.										
Buffalo.	381,000	177,000	20,000	37,000	129,000	11,034				755,034
Total	11,850,280	17,314,421	11,604,171	14,462,265	9,355,629	3,480,654	6,802,249	13,231,949	14,094,707	102,196,325
<i>Canadian and American Canals—</i>										
Fort William-Port Arthur to—										
Montreal.	192,000	372,950	342,866	41,500	83,066	84,300	5,120,485	117,200	932,700	1,233,982
Georgian bay.	3,230,250	7,723,920	5,278,800	6,330,724	7,807,728	3,857,300	3,163,000	6,124,842	1,689,600	46,406,749
Other Canadian ports.	486,300	5,435,666	4,188,660	3,414,940	3,508,444	2,827,137	7,895,049	3,315,500	15,108,857	28,029,847
Buffalo.	11,554,064	16,554,867	11,869,171	16,860,671	10,259,137	4,480,420	7,895,049	11,767,707	15,108,857	106,349,943
Duluth-Superior to—										
Montreal.		227,000	225,500					891,000		452,500
Georgian bay.		709,612								1,600,612
Other Canadian ports.										
Buffalo.	381,000	312,000	20,000	37,000	129,000	11,034				930,034
Total	15,843,614	31,376,015	21,924,997	26,684,835	21,787,375	11,260,191	16,179,134	22,216,349	17,731,157	185,003,667



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There was a very large volume of wheat moving during the year 1915 from Port Colborne to Montreal, which might properly be added to the foregoing total for Fort William-Port Arthur to Montreal. Port Colborne was used as a port of transfer. It might, in fact, be assumed that nearly all the wheat moved from the head of the Great Lakes to "other Canadian ports" actually went to Montreal.

A helpful light is thrown on the foregoing table when the monthly totals are reduced to a percentage basis, as follows:—

	1915.	1916.		1915.	1916.
April.	4.8	8.6	September .	7.3	6.1
May.....	5.5	16.9	October.....	27.5	8.7
June.....	2.0	11.9	November.....	29.7	12.0
July...	1.9	14.4	December.....	20.0	9.6
August.....	1.3	11.8			

It will be observed that a marked fluctuation occurred in 1916 as to the periods of greatest activity in the movement of Canadian wheat by water. In the first five months of the year 63.6 per cent of the whole volume of traffic was transported, as compared with 15.5 per cent for the corresponding period in 1915.

## FREIGHT RATES BY WATER.

High freight rates by water obtained during the season of 1916. The test made by the Department had reference solely to wheat; but that may safely be accepted as indicative of the character of the business as a whole.

The volume of Canadian wheat moved by water was the largest in the history of the Great Lakes trade. The facts have been given on preceding pages.

The rates of freight over the different routes during the year were as follows:—

	1914.	1915.	1916.
Port Arthur—Fort William to Montreal—			
Per ton per mile.....	0.124 cent.	0.132 cent.	0.205 cent.
Per bushel.....	4.58 "	4.99 "	7.55 "
Per ton.....	\$1.52	\$1.66	\$2.52
Port Arthur—Fort William to Georgian Bay—			
Per ton per mile.....	0.095 cent.	0.282 cent.	0.264 cent.
Per bushel.....	1.46 "	3.54 "	4.10 "
Per ton.....	48.61 "	\$1.18	\$1.37
Port Arthur—Fort William to other Canadian ports—			
Per ton per mile.....	0.065 cent.	0.124 cent.	0.169 cent.
Per bushel.....	1.48 "	2.84 "	3.68 "
Per ton.....	49.29 "	94.80 "	\$1.22
Port Arthur—Fort William to Buffalo—			
Per ton per mile.....	0.061 cent.	0.159 cent.	0.159 cent.
Per bushel.....	1.63 "	3.97 "	4.27 "
Per ton.....	53.72 "	\$1.32	\$1.42
Port Colborne to Montreal—			
Per ton per mile.....		0.288 cent.	
Per bushel.....		3.25 "	
Per ton.....		\$1.08	

The rates from Duluth were substantially the same as from Port Arthur-Fort William.



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Following is a comparison of freight rates, by months, for 1915 and 1916:—

Port Arthur-Fort William to Montreal.	1915.			1916.		
	Per bushel.	Per ton.	Per ton per mile.	Per bushel.	Per ton.	Per ton per mile.
	Cents.	\$	Cent.	Cents.	\$	Cent.
April.....	4.88	1.62	0.132	7.00	2.33	0.190
May.....	3.94	1.31	0.107	8.05	2.68	0.218
June.....	3.84	1.28	0.104	6.71	2.23	0.182
July.....	3.58	1.19	0.097	7.33	2.54	0.206
August.....	4.09	1.36	0.111	7.62	2.54	0.209
September.....	5.49	1.83	0.149	7.61	2.54	0.201
October.....	6.75	2.25	0.183			
November.....				9.11	3.07	0.249
December.....						
Average.....	4.99	1.66	0.132	7.55	2.52	0.205

Port Arthur-Fort William to Georgian Bay.	1915.			1916.		
	Per bushel.	Per ton.	Per ton per mile.	Per bushel.	Per ton.	Per ton per mile.
	Cents.	Cents.	Cent.	Cents.	\$	Cent.
April.....	1.61	53.81	0.105	4.28	1.43	0.278
May.....	1.24	41.31	0.080	3.91	1.30	0.254
June.....	1.16	38.69	0.075	3.44	1.14	0.223
July.....	1.05	35.12	0.068	4.27	1.42	0.261
August.....	1.18	38.70	0.072	4.57	1.52	0.297
September.....	1.96	63.83	0.124	4.07	1.36	0.264
October.....	3.39	\$1.13	0.221	3.84	1.22	0.247
November.....	4.48	1.49	0.291	4.28	1.40	0.277
December.....	4.99	1.66	0.353	4.52	1.51	0.294
Average.....	3.54	\$1.18	0.282	4.11	1.37	0.265

Port Arthur-Fort William to other Canadian ports.	1915.			1916.		
	Per bushel.	Per ton.	Per ton per mile.	Per bushel.	Per ton.	Per ton per mile.
	Cents.	Cents.	Cent.	Cents.	\$	Cent.
April.....	1.56	51.91	0.065	5.19	1.73	0.261
May.....	1.36	45.34	0.057	3.73	1.24	0.171
June.....	1.21	40.37	0.050	3.20	1.06	0.146
July.....	1.19	39.81	0.048	3.11	1.03	0.143
August.....	1.27	42.29	0.064	3.46	1.15	0.154
September.....	1.67	55.85	0.073	3.39	1.04	0.164
October.....	3.01	\$1.00	0.134	3.92	1.31	0.178
November.....	4.22	1.40	0.191	4.12	1.37	0.185
December.....	5.51	1.83	0.244	4.93	1.64	0.242
Total.....	2.84	94.80	0.124	3.69	1.23	0.169



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Port Arthur-Fort William to Buffalo.	1915.			1916.		
	Per bushel.	Per ton.	Per ton per mile.	Per bushel.	Per ton.	Per ton per mile.
	Cents.	Cents.	Cent.	Cents.	\$	Cent.
April.....	1.49	49.63	0.057	5.18	1.70	0.199
May.....	1.04	34.79	0.040	4.17	1.37	0.162
June.....	1.08	36.20	0.041	3.61	1.20	0.141
July.....	1.24	41.47	0.048	4.45	1.48	0.175
August.....	2.25	75.00	0.086	4.58	1.53	0.178
September.....	2.78	92.70	0.107	3.76	1.25	0.146
October.....	4.04	\$1.35	0.162	4.27	1.42	0.164
November.....	4.30	1.43	0.172	4.03	1.35	0.162
December.....	4.53	1.51	0.181	4.22	1.41	0.166
Average.....	3.97	\$1.32	0.159	4.27	1.42	0.167

In order that the bearing of the foregoing freight rates may be properly understood in their relationship to gross earnings, allowance should be made for the following charges paid by ship owners on all cargoes of wheat moved between Fort William and Montreal:—

Clearing house at Fort William.....	.01 to .03 cent per bushel.
Trimmers at Fort William.....	.06 “ “
Elevation at Montreal.....	.30 “ “
Shovelling at Montreal.....	.20 “ “
Total.....	.59 cent per bushel.

To Port Colborne the average deductions would amount to .44 per bushel, to Buffalo .41, and to Georgian Bay ports .38.

## MOVEMENT OF OTHER GRAIN.

Following is a statement of the volume of grain other than wheat passed through the Canadian and American canals at Sault Ste. Marie during the past three years:—

	1914.	1915.	1916.
	Bushels.	Bushels.	Bushels.
Oats.....	26,240,701	26,798,488	57,743,636
Barley.....	5,284,350	4,496,509	8,679,607
Flax seed.....	7,175,977	2,068,582	4,931,569
Total.....	38,701,028	33,363,579	71,354,812



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In view of the large volume of Canadian oats transported by water, it is instructive to follow the distribution to various ports. In 1916 the movement took the following channels:—

Canadian Oats. Canadian and American Canals. 1916.	April.	May.	June.	July.	August.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Fort William to Montreal . . . . .	587,880	1,384,581	1,134,900	1,985,558	1,040,000
“ Georgian Bay . . . . .	968,000	2,507,444	2,431,000	2,703,500	2,087,500
“ other Canadian ports . . . . .		1,245,010	1,140,124	1,413,772	1,682,800
“ Buffalo . . . . .	1,670,658	6,485,138	3,803,821	3,053,813	702,700
Duluth to Montreal . . . . .					
“ Georgian Bay . . . . .					
“ other Canadian ports . . . . .					
“ Buffalo . . . . .		75,000			
Total . . . . .	3,226,538	11,697,173	8,509,845	9,156,643	5,513,000
	September.	October.	November.	December.	Total.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Fort William to Montreal . . . . .	521,000	774,941	1,026,245	111,000	8,566,105
“ Georgian Bay . . . . .	1,375,000	353,500	2,627,328	4,285,500	19,338,772
“ other Canadian ports . . . . .	2,182,100	890,323	2,797,000	400,000	11,751,129
“ Buffalo . . . . .	1,384,000	753,500	159,000		18,012,630
Duluth to Montreal . . . . .					
“ Georgian Bay . . . . .					
“ other Canadian ports . . . . .					
“ Buffalo . . . . .					75,000
Total . . . . .	5,462,100	2,772,264	6,609,573	4,796,500	57,743,636



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## INSURANCE RATES.

Following are the facts with respect to marine insurance rates on the Great Lakes:—

	First Class.	Second Class.
To Lake Erie and Georgian Bay ports—		
April 15, a.m., to April 30, p.m.....	\$ 0 45	\$ 0 60
May 1, a.m., to August 31, p.m.....	0 30	0 40
September 1, a.m., to November 30, midnight	0 45	0 65
To Port Huron, Point Edward, Goderich, Sarnia and Detroit—		
April 1, a.m., to April 30, p.m.....	0 40	0 55
May 1, a.m., to August 31, p.m.....	0 25	0 35
September 1, a.m., to November 30, midnight.....	0 40	0 60
To Kingston and Lake Ontario ports, including Ogdensburg and Prescott—		
April 1, a.m., to April 30, p.m.....	0 65	0 75
May 1, a.m., to August 31, p.m.....	0 45	0 55
September 1, a.m., to November 30, midnight.....	0 60	1 00
To Montreal direct without Transhipment—		
April 20, a.m., to October 31, p.m.....	0 60	1 10
November 1, a.m., to November 30, p.m.....	0 70	1 25
To Montreal via Kingston, Prescott and Ogdensburg and Transhipped—		
If transhipped at Kingston, Ogdensburg, or Prescott, and forwarded thence to Montreal, approved standard barges, add 15 cents to Kingston, Ogdensburg and Prescott rate.		
From Lake Superior ports to Lake Michigan ports—		
Charge Lake Erie ports' rates.		
From Lake Michigan ports to Lake Michigan ports—		
Charge 50 per cent of Lake Erie ports' rates.		
From Port Colborne to Montreal—		
Sailing April 15, a.m., to August 31, midnight.....	0 30	0 40
For through rates add the rate to Lake Erie to the above. If transhipped again at Kingston, tariff charges apply.		

The foregoing schedules apply to the year 1914. For 1916 the standard rate paid on steel hulls covering to the foot of lake Erie for a period of one year with a navigating season from April 15 at midnight to November 30 at midnight was  $3\frac{3}{4}$  per cent. The usual extra  $\frac{1}{2}$  per cent for the season was charged for navigation not east of Kingston, with a further  $\frac{1}{2}$  per cent for navigation not east of Montreal, while an additional  $\frac{1}{2}$  per cent was charged for navigation as far as Cape Breton.



STATEMENT of the Tonnage of Canadian and United States Vessels.  
CANADIAN VESSELS.

Years.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Number of Trips.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
1887	1,201,529	1,194,665	162,554	36,277	Tons. 1,071	Tons. 65	Tons. 30,778	Tons. 221,013	1,395,932	1,452,020	2,847,952	18,991
1888	1,113,290	1,120,774	158,209	34,368	1,252		22,553	189,876	1,295,304	1,345,018	2,640,322	17,661
1889	1,285,574	1,207,892	188,131	39,371	976	802	20,271	252,565	1,494,952	1,500,630	2,995,582	19,393
1890	1,314,127	1,250,999	229,478	32,909	929	351	14,003	296,676	1,558,537	1,580,935	3,139,472	20,655
1891	1,356,518	1,287,168	201,758	28,642	550	292	16,350	244,176	1,575,176	1,560,278	3,135,454	19,246
1892	1,517,249	1,460,505	177,136	29,184	1,466	394	14,659	201,374	1,710,510	1,691,455	3,401,965	21,177
1893	1,548,094	1,422,326	170,186	26,787	1,172	10	17,037	248,442	1,736,489	1,697,565	3,434,054	20,757
1894	1,319,792	1,260,907	217,635	19,298	2,177	5	6,394	222,696	1,545,998	1,502,906	3,048,904	19,027
1895	1,258,848	1,165,683	253,693	13,383			5,889	285,553	1,518,440	1,464,619	2,983,059	17,136
1896	1,547,757	1,420,342	200,292	5,234	157		4,115	271,809	1,752,321	1,697,385	3,449,706	20,972
1897	1,629,192	1,482,951	215,785	11,378			3,533	297,898	1,848,510	1,792,227	3,640,737	21,466
1898	1,704,661	1,609,255	215,393	4,927	499	518	6,805	255,927	1,927,358	1,870,627	3,797,985	21,509
1899	1,865,643	1,774,789	242,817	32,436	925	3,691	42,290	345,980	2,151,675	2,156,896	4,308,571	23,579
1900	1,767,293	1,681,340	265,926	14,922	2,909	64	38,015	358,781	2,074,143	2,055,107	4,129,250	21,755
1901	1,615,952	1,587,221	279,007	82,541	3,300	2,908	97,332	312,003	1,995,591	1,984,673	3,980,264	20,860
1902	1,914,167	1,840,787	241,356	97,492	1,874	2,164	101,335	286,520	2,258,732	2,226,963	4,485,695	22,198
1903	2,061,258	2,088,969	340,383	143,614	7,018	3,082	188,896	379,612	2,597,555	2,615,277	5,212,832	23,767
1904	1,838,260	1,907,886	299,245	159,740	5,175	4,223	237,910	319,661	2,380,590	2,391,510	4,772,100	21,851
1905	2,059,097	2,031,766	312,773	188,138	11,820	3,191	262,401	322,005	2,646,091	2,545,100	5,191,191	23,726
1906	2,271,776	2,264,476	292,705	155,595	24,420	5,506	202,276	309,567	2,791,177	2,735,144	5,526,321	25,498
1907	2,561,948	2,661,317	337,822	129,246	9,153	7,331	238,172	383,922	3,147,095	3,181,685	6,328,911	28,833
1908	2,726,776	2,748,139	318,327	227,315	5,057	7,844	348,944	398,387	3,399,104	3,381,685	6,780,789	29,040
1909	3,335,187	2,992,403	300,320	217,989	82,591	111,236	257,945	513,907	3,976,043	3,835,535	7,811,578	22,507
1910	3,891,613	3,504,463	315,656	122,688	95,151	89,618	287,555	627,046	4,597,975	4,343,815	8,931,790	25,337
1911	3,997,073	3,646,516	333,500	176,690	8,499	2,332	393,012	614,570	4,732,084	4,440,108	9,172,192	25,585
1912	4,457,303	4,168,304	617,407	21,176	9,907	1,053	180,735	781,450	5,265,352	4,971,983	10,237,335	27,371
1913	4,964,635	4,827,587	898,249	67,031	3,531	5,231	348,477	963,300	6,214,892	5,863,149	12,078,041	28,654
1914	4,891,369	4,976,317	764,317	124,505	4,687	2,109	385,433	902,119	6,045,806	6,005,050	12,050,856	26,125
1915	3,809,004	3,662,531	730,617	213,887	11,508	7,232	166,428	797,000	4,717,557	4,680,650	9,398,207	21,575
1916	3,524,708	3,598,347	1,105,761	270,517	20,846		215,156	1,103,694	4,866,471	4,972,558	9,839,029	23,002



GENERAL STATISTICS.

The following tables of general statistics will afford further information with regard to the canals of Canada:—  
STATEMENT of Total Freight passed through the Canals for the following years.

Years.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Up and Down.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Tons.			
1887	Tons. 336,648	Tons. 1,154,424	Tons. 138,692	Tons. 202,563	Tons. 151,805	Tons. 192,528	Tons. 86,374	Tons. 457,482	713,519	2,006,997	2,720,516	
1888	355,165	1,146,260	138,127	174,239	214,407	223,429	81,611	428,357	789,310	1,972,287	2,761,597	
1889	384,777	1,156,306	122,295	198,497	267,224	300,193	81,243	603,311	855,529	2,258,367	3,113,896	
1890	369,593	1,137,011	144,368	133,188	216,813	320,324	58,709	533,021	789,505	2,123,542	2,913,047	
1891	370,120	1,155,247	103,814	123,193	248,188	307,958	50,747	543,259	772,869	2,129,657	2,902,526	
1892	327,560	1,322,137	173,538	135,787	241,034	302,983	47,396	481,301	789,528	2,242,208	3,041,736	
1893	351,706	1,344,822	214,076	141,602	247,329	385,769	54,912	806,773	808,023	2,678,966	3,546,989	
1894	299,155	1,140,606	204,175	89,614	231,172	363,107	46,020	568,866	780,522	2,162,193	2,942,715	
1895	264,824	1,070,046	286,191	91,177	362,637	608,778	62,285	590,140	975,937	2,360,141	3,336,078	
1896	293,353	1,619,668	259,659	100,519	1,197,245	3,536,054	117,535	867,040	1,867,792	6,123,281	7,991,073	
1897	275,587	1,713,274	268,700	187,960	669,142	4,369,314	108,787	935,203	1,322,216	7,238,751	8,550,967	
1898	263,989	1,819,887	187,253	98,967	829,508	2,425,121	81,615	912,135	1,362,365	5,256,110	6,618,475	
1899	296,208	1,833,412	266,364	115,133	732,030	2,129,988	125,678	727,111	1,420,280	4,805,644	6,235,924	
1900	312,201	1,632,915	270,033	81,714	538,197	1,339,915	105,155	763,563	1,255,586	3,758,107	5,013,693	
1901	340,805	1,686,094	268,449	201,231	507,204	1,801,696	177,715	682,065	1,294,173	4,371,086	5,665,259	
1902	529,085	2,064,480	308,212	342,484	515,828	3,000,636	190,243	562,229	1,546,368	5,969,829	7,513,197	
1903	648,150	2,391,366	430,174	408,500	863,337	3,130,816	373,456	958,012	2,315,117	6,888,760	9,203,817	
1904	606,737	2,047,499	511,887	2,6,578	699,784	2,778,903	483,795	851,033	2,302,203	5,954,057	8,256,236	
1905	736,976	2,252,314	549,365	347,089	607,228	3,183,895	577,528	1,137,146	2,451,097	6,920,147	9,371,744	
1906	1,238,929	2,355,855	627,094	234,919	991,508	3,595,276	482,239	99,385	3,339,770	7,183,415	10,523,185	
1907	1,034,733	3,162,158	891,692	226,138	1,991,959	11,060,878	819,369	1,356,712	4,737,753	15,805,886	20,543,639	
1908	1,028,246	3,292,422	560,736	278,721	1,704,310	8,218,866	912,300	1,447,219	4,265,592	13,237,228	17,502,820	
1909	1,608,659	3,504,849	1,060,715	607,894	1,985,522	22,185,226	1,023,829	1,544,054	5,744,349	27,976,399	33,729,745	
1910	2,312,740	3,861,272	600,144	661,436	3,323,822	29,530,163	995,749	1,705,282	7,222,155	35,758,153	42,980,608	
1911	2,340,414	3,910,558	572,470	995,719	2,546,677	23,458,276	2,086,777	2,089,380	7,576,440	30,453,913	38,040,353	
1912	2,212,928	4,973,312	867,250	961,838	2,042,819	32,434,735	1,343,288	2,625,529	6,092,801	40,993,444	47,087,249	
1913	6,286,637	1,478,233	967,712	1,478,233	2,694,527	33,670,484	1,906,944	2,876,415	7,782,114	44,271,799	52,063,913	
1914	1,474,124	C,381,242	999,256	618,275	1,491,563	21,610,033	1,264,343	3,184,401	229,286	31,793,951	37,023,237	
1915	1,073,014	4,200,658	928,860	643,331	505,574	4,848,152	344,110	2,545,104	2,861,358	12,337,245	15,198,804	
1916	822,048	4,689,615	888,640	945,151	532,540	11,522,602	721,705	3,391,190	3,034,934	20,548,578	27,583,491	

\*Sault Ste Marie canal opened in September, 1895



STATEMENT of the Tonnage of Canadian and United States Vessels.

UNITED STATES VESSELS.

Years.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Number of Trips.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		
1887	16,265	17,925	38,857	56,708	143,730	140,562	52,793	98,840	251,645	315,035	566,680	3,883
1888	14,304	26,801	42,425	50,047	177,714	156,035	49,778	114,613	284,221	347,556	631,777	3,921
1889	21,125	26,449	55,996	50,732	253,088	206,567	56,249	160,442	386,458	444,190	830,648	4,542
1890	10,390	16,345	38,156	36,397	248,418	234,728	39,697	97,266	336,661	384,736	721,397	3,364
1891	10,357	29,851	70,665	27,727	283,013	238,818	31,083	146,602	395,118	442,998	838,116	3,602
1892	12,023	29,405	88,221	22,763	280,315	229,437	37,037	172,594	417,596	454,199	871,795	3,928
1893	10,752	34,303	214,047	33,741	351,994	282,724	50,994	307,740	627,787	658,508	1,286,295	4,585
1894	18,528	30,201	139,720	20,830	302,562	269,788	37,406	192,992	498,216	513,811	1,012,027	4,131
1895	8,838	24,768	139,554	17,712	262,240	216,542	32,295	185,730	441,927	444,752	886,679	4,427
1896	11,496	19,093	195,228	21,953	357,205	292,359	40,416	290,370	604,345	623,775	1,228,120	4,650
1897	14,666	18,367	269,430	17,618	338,938	277,345	26,341	347,698	649,375	661,028	1,310,403	4,675
1898	12,142	9,541	133,524	32,880	308,878	305,464	32,331	336,004	586,875	683,889	1,270,764	4,264
1899	17,217	18,044	172,897	30,002	1,605,887	1,156,503	51,902	234,336	1,846,848	1,438,885	3,285,733	6,101
1900	13,316	17,824	157,689	30,443	1,208,725	744,276	45,741	190,971	1,425,471	983,514	2,408,985	5,502
1901	11,587	18,706	177,169	28,124	922,464	1,044,707	54,895	224,622	1,166,115	1,316,159	2,482,274	5,634
1902	13,622	37,871	187,826	70,641	1,756,948	1,654,672	123,257	241,602	2,081,653	2,004,786	4,086,439	6,433
1903	14,014	24,168	265,208	65,247	1,736,187	1,689,414	106,401	335,836	2,121,810	2,114,665	4,236,475	6,695
1904	10,122	16,890	275,721	39,993	1,464,316	1,475,085	68,081	305,697	1,818,240	1,837,665	3,655,905	6,253
1905	19,743	19,444	364,985	81,876	2,350,494	1,701,704	1,101,536	456,459	2,836,758	2,259,483	5,096,241	7,085
1906	34,306	15,324	356,259	78,561	2,738,623	1,928,131	115,675	418,436	3,244,863	2,440,452	5,685,315	7,319
1907	57,349	72,018	304,591	72,048	4,730,053	5,376,060	205,769	623,941	5,463,767	6,141,067	11,604,834	9,328
1908	54,587	32,705	442,773	124,120	2,975,624	4,142,392	218,835	536,103	3,685,819	4,835,320	8,521,139	7,489
1909	263,592	109,407	442,176	200,202	4,178,378	10,429,614	213,750	621,903	5,098,196	11,361,126	16,459,322	9,996
1910	119,222	50,498	429,702	305,330	5,509,417	14,488,565	299,462	576,101	6,356,803	15,420,494	21,777,297	11,462
1911	49,778	12,643	626,897	576,313	3,348,936	12,057,484	709,084	850,487	4,734,695	13,496,927	18,231,622	10,370
1912	50,296	15,518	763,426	470,330	5,778,534	16,011,911	614,311	931,864	7,206,567	17,429,623	24,636,190	11,785
1913	61,301	29,788	673,382	711,603	5,657,984	15,567,499	703,212	834,019	7,095,879	17,142,909	24,238,788	10,739
1914	39,246	31,535	563,517	373,829	3,292,736	10,259,835	268,800	806,916	4,164,299	11,472,115	15,636,414	7,742
1915	49,138	30,310	672,094	306,502	2,934,955	2,419,998	171,696	800,408	3,827,883	3,557,218	7,385,101	6,415
1916	6,800	74,093	27,031	794,719	2,958,652	5,229,040	288,547	943,778	4,116,011	6,544,828	10,660,839	6,800



Vessel and Freight Tonnage passed through the Sault Ste. Marie Canal.

Years.	Canadian Vessels.		U.S. Vessels.		Total No.	Vessel Tonnage.	Freight Tonnage.			Lockages	Days Open.	Remarks.
	No.	Tonnage.	No.	Tonnage.			Canadian	United States.	Total.			
1895	609	126,531	583	623,092	1,192	749,626			595,837	699	87	Canal first opened Sept. 9, 1895.
1896	2,070	589,407	3,066	3,805,749	5,136	4,395,156			4,577,399	3,042	218	
1897	1,909	405,546	2,359	3,391,936	4,268	3,797,482			4,947,065	2,604	238	
1898	1,811	403,931	1,864	2,353,699	3,675	2,757,630			3,055,387	2,520	243	
1899	2,000	558,552	1,769	2,389,457	3,769	2,948,009			3,006,664	2,610	239	
1900	1,790	577,310	1,291	1,617,438	2,081	2,194,748			2,035,677	2,205	238	
1901	2,796	775,151	1,408	1,674,597	4,204	2,449,748			2,820,394	2,910	246	
1902	3,080	1,366,930	1,964	3,237,372	5,044	4,604,302			4,729,268	3,418	264	
1903	2,711	1,615,939	1,640	3,146,897	4,351	4,762,746			5,511,868	3,242	256	
1904	2,637	1,555,042	1,325	2,675,663	3,962	4,230,705			5,030,705	3,022	241	
1905	3,970	1,803,299	1,692	2,734,349	5,662	5,537,637			5,473,406	4,031	255	
1906	3,922	1,959,252	1,758	4,399,872	5,680	6,359,124			6,574,039	4,152	253	
1907	3,217	2,154,688	3,132	9,961,281	5,349	12,115,969			15,588,165	4,596	238	
1908	3,289	2,603,232	2,204	7,035,655	5,293	9,638,887	2,092,231	10,666,985	12,759,216	3,667	235	Origin of cargo first shown.
1909	2,597	2,988,936	3,734	14,850,738	6,331	17,839,674	3,366,495	24,494,750	27,861,245	5,046	240	
1910	2,744	3,173,491	5,228	20,187,704	7,972	23,361,198	2,345,619	33,050,068	36,395,687	6,110	248	
1911	2,713	3,108,880	4,068	16,252,340	6,781	19,361,220	3,177,581	27,774,128	30,951,709	6,802	236	
1912	2,643	3,296,229	5,213	22,536,015	7,856	25,832,244	4,090,362	35,579,293	39,669,655	6,200	240	
1913	3,279	3,793,434	5,006	22,181,007	8,285	25,974,411	4,954,734	37,744,590	42,699,324	6,266	246	
1914	3,011	3,473,292	2,966	13,827,870	6,977	17,301,162	3,603,747	23,989,437	27,599,184	4,712	239	
1915	3,000	3,041,003	1,331	5,443,812	4,331	8,484,815	2,561,734	5,189,223	7,750,957	4,374	248	
1916	4,595	4,089,937	2,094	8,703,187	6,689	12,793,124	7,486,962	16,096,529	23,583,491	4,777	245	



7 GEORGE V, A. 1917

CAPITAL EXPENDITURE.

The following statement brings the capital expenditure on the canals of the Dominion down to March 31, 1916. It must be understood, however, that the total shown is apart from the outlay by the Imperial Government on the Carillon and Grenville canal, as to which the records were lost in the destruction by fire of the Ordnance Office, Montreal, in 1852. The details are as follows:—

Canal.	Capital.		
	Construction.	Enlargement.	Total.
	\$ cts.	\$ cts.	\$ cts.
Beauharnois.....	1,636,690 26		1,636,690 26
Carillon and Grenville.....	63,053 64	4,119,039 32	4,182,092 96
Chambly.....	637,056 76	94,639 76	731,696 52
Cornwall.....	1,945,624 73	5,300,679 48	7,246,304 21
Culbute.....	382,391 46		382,391 46
Lachine.....	2,589,532 85	11,519,078 74	14,108,611 59
Lake St. Francis.....		75,906 71	75,906 71
Lake St. Louis.....		298,176 11	298,176 11
Murray.....	1,248,946 71		1,248,946 71
Rideau.....	4,084,323 37	83,745 84	4,168,069 21
Sault Ste. Marie.....	4,994,372 51		4,994,372 51
Soulanges.....	7,904,044 53		7,904,044 53
Ste. Anne's.....	134,456 51	1,035,759 12	1,170,215 63
Fleuve St. Lawrence and canals.....	18,442 85	3,451,470 56	3,469,913 41
St. Ours.....	121,537 65	5,690 91	127,228 56
St. Peter's.....	648,547 14		648,547 14
Tay.....	489,599 23		489,599 23
Trent.....	15,626,295 14		15,626,295 14
Welland.....	7,693,824 03	21,925,171 63	29,618,995 66
Welland Ship Canal.....	9,960,563 44		9,960,563 44
Williamsburg (Farran's Point.....		877,090 57	10,491,098 07
Galops.....		6,121,213 70	
Rapide Plat.....		2,158,242 00	
Williamsburg.....	1,320,655 54	13,896 26	1,630,548 96
St. Andrew's Lock.....	1,630,548 96		
Total.....	63,130,507 31	57,079,850 71	120,210,308 02

The cost of maintenance for the fiscal year 1916 was \$1,575,272.08.

I have the honour to be, sir,

Your obedient servant,

J. L. PAYNE,  
Comptroller of Statistics.



SESSIONAL PAPER No. 20a

# CANAL STATISTICS

## FOR

### SEASON OF NAVIGATION, 1916.

#### GRAIN PASSED DOWN WELLAND.

The quantity of barley, corn, oats, peas, rye, and wheat passed down the Welland canal, from ports west of Port Colborne for a period of thirty-five years is as follows:—

Quantity passed down to Montreal.		To ports in Ontario.	Quantity from U.S. Ports to U.S. Ports.
	Tons.	Tons.	Tons.
1882	180,694		63,881
1883	186,814	10,650	121,876
1884	142,194	12,153	104,537
1885	96,569	11,909	117,346
1886	203,940	9,881	151,551
1887	185,034	11,838	134,868
1888	160,358	25,599	169,664
1889	267,769	19,075	213,766
1890	288,513	15,899	245,932
1891	295,509	6,805	202,710
1892	261,954	8,942	201,540
1893	501,806	25,555	222,958
1894	273,651	16,699	203,979
1895	231,491	32,096	133,823
1896	461,049	73,386	160,372
1897	*560,254	53,257	157,756
1898	519,532	31,279	144,612
1899	332,746	40,197	68,011
1900	244,661	17,525	84,589
1901	151,566	13,732	83,370
1902	208,215	22,787	81,164
1903	251,936	29,062	111,828
1904	198,246	23,711	102,523
1905	341,431	42,061	129,270
1906	304,935	33,351	176,119
1907	635,573	42,032	163,295
1908	756,141	38,142	135,172
1909	652,742	40,238	129,587
1910	789,661	63,657	115,457
1911	836,924	51,560	121,655
1912	961,855	47,866	117,195
1913	1,265,368	63,806	122,069
1914	1,836,456	90,910	70,186
1915	1,120,027	33,200	109,810
1916	609,119	34,890	36,775

During the last decade the quantity of agricultural products, as above passed down the Welland and St. Lawrence canals to Montreal has decreased from 635,573 tons in 1907 to 609,119 in 1916, and the quantity passed down



7 GEORGE V, A. 1917

the Welland canal from United States ports to United States has decreased from 163,295 to 36,775 tons for the same years.

The quantity of barley, buckwheat, corn, oats, peas, rye, and wheat, arrived at Montreal via Grand Trunk and Canadian Pacific railways for a period of 15 years, is reported as follows:—

Year.	Tons.
1902	263,861
1903	253,959
1904	154,625
1905	148,377
1906	386,961
1907	383,731
1908	285,261
1909	426,163
1910	280,705
1911	241,134
1912	462,444
1913	268,388
1914	689,969
1915	558,043
1916	1,700,219

The quantity of the same articles passed down the whole length of the St. Lawrence canals to Montreal for the same period was:—

Year.	Tons.
1902	242,225
1903	400,057
1904	220,076
1905	375,630
1906	449,673
1907	684,697
1908	776,374
1909	652,742
1910	789,661
1911	836,924
1912	964,187
1913	1,265,376
1914	1,836,456
1915	1,120,027
1916	609,119

Comparative shipments of grain by the St. Lawrence route, and railways are as follows:—

QUANTITY OF GRAIN TO SEABOARD BY COMPETING ROUTES.

The quantity of grain and peas passed down the whole length of the St. Lawrence canals to Montreal is as follows:—

	Tons.
For 1915.....	1,120,027
1916.....	609,119
Showing a decrease of.....	510,008



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The quantity of grain and peas carried to Montreal via Grand Trunk and Canadian Pacific railways is reported as follows:—

	Tons.
For 1915.....	558,043
1916.....	1,770,219
Showing an increase of.....	1,212,176

The quantity of grain passed down the Welland canal in Canadian and United States vessels to Kingston and Prescott for fifteen years is as follows:—

In Canadian vessels there were,

	Tons.
1902, 131 cargoes, with an aggregate quantity of ...	175,514
1903, 170 " "	218,840
1904, 115 " "	174,121
1905, 167 " "	239,418
1906, 205 " "	344,605
1907, 255 " "	427,813
1908, 355 " "	598,941
1909, 308 " "	550,276
1910, 383 " "	679,358
1911, 421 " "	728,223
1912, 504 " "	796,858
1913, 687 " "	1,128,324
1914, 911 " "	1,004,236
1915, 693 " "	992,252
1916, 339 " "	560,002

In United States vessels there were,

	Tons.
1902, 135 cargoes, with an aggregate quantity of ...	136,652
1903, 219 " "	273,986
1904, 118 " "	150,359
1905, 235 " "	273,344
1906, 178 " "	269,800
1907, 263 " "	413,087
1908, 271 " "	330,514
1909, 174 " "	272,291
1910, 182 " "	295,714
1911, 173 " "	281,916
1912, 154 " "	330,058
1913, 253 " "	322,919
1914, 178 " "	219,462
1915, 157 " "	270,785
1916, 56 " "	120,782

One hundred and sixty-two Canadian and 49 American vessels took cargoes of 343,733 tons through to Montreal intact in 1908; 87 Canadian and 9 American of 135,582 in 1907; 74 Canadian and 10 American of 108,734 tons in 1906; 96 Canadian and 18 American of 180,206 in 1905; 56 Canadian and 16 American of 116,095 tons in 1904; 56 Canadian and 18 American of 99,582 tons in 1903; 19 Canadian and 17 American of 34,804 tons in 1902; 23 Canadian and 2 American of 17,303 tons in 1901; 15 of 7,924 tons in 1900, 2 of 558 tons in 1899, 7 of 2,426 in 1898, 7 of 2,324 in 1897, 3 of 1,176 in 1896, 4 of 1,344 tons in 1905.



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2 cargoes of 810 tons in 1894, none in 1893, 2 in 1892 of 934 tons, and 3 in 1891 of 1,441 tons. Three vessels lightened a portion of their cargoes in 1901, 9 in 1900, 11 in 1899, 25 in 1898, 11 in 1897, 16 in 1896, 6 in 1895, 19 in 1894, 34 in 1893, 25 in 1892, and 44 in 1891; 222 vessels discharged the whole of their cargoes at Kingston in 1901, 540 in 1900, 316 in 1899, 473 in 1898, 359 in 1897, 335 in 1896, 169 in 1895, 188 in 1894, 369 in 1893, 220 in 1892, and 293 in 1891.

The quantity of grain transhipped at Port Colborne in 1909 and the four previous years was as follows:—

Articles.	1905.	1906.	1907.	1908.	1909.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Wheat.....	679,840	1,009,474	1,428,300	1,106,244	2,686,963
Corn.....	104,027	110,629	112,036		
Rye.....					
Oats.....		29,118	30,824	23,945	
Barley.....		2,103		56,544	22,216
Flaxseed.....			30,040	49,628	8,202

WELLAND CANAL.

The total quantity of freight passed on the Welland canal during the season of 1916 was 2,544,964 tons; of this quantity 229,996 tons was way or local freight.

There were 2,045,343 tons of freight passed eastward, and 499,621 passed westward.

*East- and Westbound Through Freight.*

The total quantity of through freight passed through the whole length of the Welland canal during the season of 1916 was 2,314,968 tons.

Of this quantity 1,871,034 tons were eastbound and 443,934 westbound freight.

Of the eastbound through freight, Canadian vessels carried 1,441,609 tons and United States vessels carried 429,425 tons; and of the westbound through freight, Canadian vessels carried 241,217 tons and United States vessels carried 202,717 tons, or a total of 1,682,826 tons for Canadian, and 632,142 tons for American vessels.

ST. LAWRENCE CANALS.

The total quantity of freight passed through these canals during 1916 was 3,368,064 tons; of this quantity, 2,669,542 tons passed eastward and 698,522 passed westward.

*East- and Westbound Through Freight.*

The total quantity of through freight was 2,973,785 tons; of this quantity 2,404,815 tons were eastbound and 568,970 tons were westbound.

*Way Freight.*

Of the total quantity of (way) or local freight, 264,727 tons were eastbound and 129,552 tons westbound freight.



## SESSIONAL PAPER No. 20a

## THROUGH TRAFFIC BETWEEN MONTREAL AND PORTS ON LAKE ERIE, MICHIGAN, ETC.

The total quantity of through freight passed eastward from Lake Erie and westward from Montreal through the Welland and St. Lawrence canals, during fifteen years, was as follows:—

Year.	Eastward to Montreal.	Westward from Montreal.
1902.....	250,475	25,289
1903.....	390,786	100,699
1904.....	278,328	71,512
1905.....	448,704	72,482
1906.....	554,231	96,791
1907.....	789,167	1,281
1908.....	864,926	3,472
1909.....	925,005	191,510
1910.....	1,170,139	172,360
1911.....	1,293,638	233,335
1912.....	1,559,963	236,979
1913.....	1,710,219	333,592
1914.....	2,052,900	360,645
1915.....	1,813,998	289,215
1916.....	1,575,404	230,922

## THROUGH FREIGHT FROM UNITED STATES PORTS TO UNITED STATES PORTS.

The total quantity of through freight passed eastward and westward through the Welland canal, from United States ports to United States ports, for a period of fifteen years, was as follows:—

Year.	Eastward.	Westward.	Total.
	Tons.	Tons.	Tons.
1902.....	224,110	44,919	269,029
1903.....	221,074	149,151	370,225
1904.....	165,337	87,144	252,481
1905.....	190,547	112,549	303,096
1906.....	237,226	84,205	321,431
1907.....	218,997	177,660	396,657
1908.....	209,518	239,136	448,654
1909.....	196,838	248,581	445,419
1910.....	197,301	288,198	485,499
1911.....	175,752	309,603	485,355
1912.....	180,319	235,437	415,756
1913.....	204,597	320,736	525,333
1914.....	170,624	338,455	509,079
1915.....	156,167	329,449	485,616
1916.....	55,361	148,046	203,407

The total quantity of freight passed through the Welland canal from United States ports to United States ports shows a decrease of 252,209 tons, as compared with the previous year; and a decrease of 65,622 tons as compared with 1902.



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The following statement shows the aggregate number of vessels and the total quantity of freight passed through the Welland canal, and the quantity passed between United States ports during the year 1867 to 1916, inclusive:—

Fiscal Year.	Aggregate Number of Trips.	Total quantity transported on the Welland Canal.	Quantity. passed from United States ports to United States ports.
	Number.	Tons.	Tons.
1867.....	5,405	933,260	458,386
1868.....	6,157	1,161,821	641,711
1869.....	6,069	1,231,903	688,700
1870.....	7,356	1,311,956	747,567
1871.....	7,729	1,478,122	772,756
Season of Navigation.			
1872.....	6,063	1,333,104	606,627
1873.....	6,425	1,506,484	656,208
1874.....	5,814	1,389,173	748,557
1875.....	4,242	1,038,050	477,809
1876.....	4,789	1,099,810	488,815
1877.....	5,129	1,175,398	493,841
1878.....	4,429	968,758	373,738
1879.....	3,960	865,664	284,043
1880.....	4,104	819,934	179,605
1881.....	3,332	686,506	194,173
1882.....	3,334	790,643	282,806
1883.....	3,267	1,005,156	432,611
1884.....	3,138	837,811	407,079
1885.....	2,738	784,928	384,509
1886.....	3,589	980,135	464,478
1887.....	2,785	777,918	340,501
1888.....	2,647	878,800	434,753
1889.....	2,975	1,085,273	563,584
1890.....	2,883	1,016,165	233,957
1891.....	2,594	975,013	553,800
1892.....	2,615	955,554	541,065
1893.....	2,843	1,294,823	631,667
1894.....	2,412	1,008,221	592,267
1895.....	2,222	869,595	469,779
1896.....	2,766	1,279,987	653,213
1897.....	2,725	1,274,292	564,694
1898.....	2,384	1,140,077	487,539
1899.....	2,202	789,770	360,529
1900.....	2,399	719,360	318,529
1901.....	1,547	620,209	274,019
1902.....	1,568	665,387	269,029
1903.....	1,787	1,002,919	370,225
1904.....	1,433	811,371	252,481
1905.....	1,595	1,092,050	305,096
1906.....	1,536	1,201,967	321,431
1907.....	1,982	1,614,132	396,743
1908.....	2,351	1,703,453	448,654
1909.....	2,433	2,025,951	445,419
1910.....	2,544	2,326,290	487,499
1911.....	2,480	2,537,629	485,355
1912.....	2,905	2,851,915	415,756
1913.....	3,229	3,570,714	525,333
1914.....	3,692	3,860,969	509,079
1915.....	2,922	3,061,012	485,616
1916.....	2,939	2,544,964	203,407



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The total quantity of freight passed through the several divisions of the Canadian canal system during the season of 1916 is as follows:—

—	Farm Stock.	Forest Produce of Wood.	Manu- facturers.	Products of Mines.	Agricultural Products.	Total.
	Tons.	Tons.	Tons.	Tons.	Tons..	Tons.
Sault Ste. Marie.....	522	39,245	373,664	12,596,929	3,808,289	16,813,649
Welland.....		265,563	184,779	1,401,044	693,578	2,544,964
St. Lawrence.....	4,459	650,590	211,530	1,840,930	660,555	3,368,064
Chambly.....	210	242,654	19,679	126,300	10,134	398,977
St. Peter's.....	330	30	964	3,787	4,518	9,629
Murray.....		2	9,738	36,880	60	46,680
Ottawa.....	2,940	139,168	20,168	71,992	3,383	237,651
Rideau.....	2,583	9,912	10,754	81,658	523	105,430
Trent.....	298	38,841	2,776	328	2,766	45,009
St. Andrews.....		2,868	214	10,356	.....	13,438

The total quantity of freight moved on the Welland canal was 2,544,964 tons, of which 693,578 tons were agricultural products.

On the St. Lawrence canals the total quantity of freight moved was 3,368,064 tons, of which 660,555 were agricultural products, and 211,530 tons were manufactures.

On the Ottawa canals the total quantity of freight moved was 237,651 tons; of this quantity, 139,168 tons were the produce of the forest.



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The United States canal was open to navigation during the season of—

1889.....	234 days.	1902.....	256 days.
1890.....	228 “	1903.....	249 “
1891.....	225 “	1904.....	223 “
1892.....	233 “	1905.....	245 “
1893.....	219 “	1906.....	249 “
1894.....	234 “	1907.....	233 “
1895.....	231	1908.....	231 “
1896.....	232 “	1909.....	236 “
1897.....	234 “	1910.....	224 “
1898.....	241 “	1911.....	237 “
1899.....	231 “	1912.....	237 “
1900.....	238 “	1913.....	245 “
1901.....	230 “	1914.....	242 “
		1915.....	248 “
		1916.....	245 “

The Canadian canal was open to navigation during the season of—

1895.....	87 days.	1905.....	255 days.
1896.....	218 “	1906.....	253 “
1897.....	238 “	1907.....	238 “
1898.....	243 “	1908.....	235 “
1899.....	239 “	1909.....	240 “
1900.....	238 “	1910.....	248 “
1901.....	246 “	1911.....	236 “
1902.....	264 “	1912.....	240 “
1903.....	256 “	1913.....	246 “
1904.....	241 “	1914.....	239 “
		1915.....	248 “
		1916.....	245 “

The average number of vessels passing per day through the two canals for the season 1916 was 104.



## SESSIONAL PAPER No. 20a

## COMPARATIVE STATEMENT of the Commerce through the United States St. Mary's Falls canals and the Canadian Sault Ste. Marie canal, for the Seasons of 1915 and 1916.

	Traffic for 1916.		Total Traffic for		Increase.	Decrease.
	United States Canal.	Canadian Canal.	Season of 1916.	Season of 1915.	Amount.	Amount.
Vessels	18,716	6,689	25,405	21,284	4,121	
Lockages	11,413	4,777	16,190	13,808	2,382	
Tonnage, registered	57,038,207	12,793,124	69,831,331	56,403,662	13,427,669	
Tonnage, freight	75,085,219	16,813,649	91,898,868	71,299,950	20,598,918	
Passengers	23,307	31,734	55,041	50,425	4,616	
Coal, hard	2,122,509	88,610	2,211,119	2,026,724	184,395	
Coal, soft	12,970,073	945,037	13,915,110	11,336,134	2,578,976	
Flour	6,887,550	3,353,270	10,240,820	8,470,149	1,770,671	
Wheat	139,237,877	86,874,340	226,112,217	255,481,608		29,369,391
Grain, excluding wheat	47,103,053	46,096,508	93,199,561	64,775,989	28,423,572	
Manufactured and pig iron	179,123	54,162	233,285	291,789		58,504
Salt	663,053	66,787	729,840	704,146	25,694	
Copper	122,161	3,972	126,133	156,436		30,303
Iron ore	51,949,988	11,504,773	63,454,761	45,219,959	18,234,802	
Lumber	327,663,000	6,333,600	333,996,600	438,156,000		104,159,400
Silver ore						
Building stone						
Unclassified freight	1,240,824	399,592	1,640,416	1,561,023	79,393	



C.—TABLE showing the Tonnage of the undermentioned Articles passed through the Welland canal in transit between Ports in the United States during a series of forty-six years, ended December 31, 1916.

Years.	Vegetable Food.										Heavy Goods.				
	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	*Other Articles.	Total.							
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Railway Iron.	Other Iron.	Sugar and Salt.	Coal.	Ores.	Total.	Tons.
1869	30,681	211,085	91,149	2,942		667	1,006	337,530	68,064	14,334	89,086	28,566	35,912	235,962	
1872	10,482	124,695	89,761	1,391	7,400		608	234,337	24,040	13,239	49,843	95,741	59,401	224,264	
1873	10,805	127,727	101,329	1,920	1,188	3	392	243,366	4,659	13,826	40,507	170,242	62,942	292,176	
1874	8,230	229,053	125,627		5,948		5,368	374,226	5,742	8,941	22,888	203,673	19,651	260,895	
1875	1,881	113,832	54,188	2,641	2,946	500	1,920	177,908	14	4,123	12,931	192,767	34,616	244,451	
1876	5,187	96,247	58,138		1,905	525	403	162,405		5,531	29,395	167,110	25,808	227,844	
1877	3,342	107,396	65,260	1,603	2,314	258	413	180,586	8,976	8,688	8,336	172,868	41,107	239,975	
1878	1,316	65,542	60,026	859	277		341	128,361		10,713	3,892	150,583	13,535	178,723	
1879	159	53,791	33,401		464		11	87,826	2,405	3,648	6,318	118,573	17,797	148,741	
1880		30,611	16,122	1,551	296			48,580	4,743	3,515	371	65,945	18,380	92,954	
1881		34,320	30,031	924			10	65,285	1,313	5,570		83,858	6,464	97,205	
1882	107	30,227	32,433	537		684	14	64,002		4,076		158,552	14,533	177,161	
1883	2,041	54,382	66,128	735	731		8,579	132,496	1,206	6,901	8	196,462	24,891	229,471	
1884	1,715	40,956	53,707		9,874		8,170	114,422	698	599		210,790	15,100	227,187	
1885	124	53,235	63,229	732	882		1	118,203		1,594		198,410	15,029	215,039	
1886	7,591	53,258	94,048		4,799		13,201	172,888	156	5,328	1	189,964	11,364	206,813	
1887	11,780	37,678	83,431	1,732	12,050		10,859	157,530		4,406		82,780	2,627	87,828	
1888	8,563	39,999	102,974	2	26,510	179	11,598	189,825	63	1,601	56	173,259	2,309	177,288	
1889	5,017	39,229	147,045		27,492		17,225	236,208		1,587	896	227,476	1,204	231,163	
1890	9,204	31,527	180,842	6,519	27,030		20,497	275,619		504	208	162,231	1,620	164,563	
1891	6,802	32,097	127,494	8,113	52,823		26,115	253,444		292	705	186,572	1,773	189,342	
1892	11,018	26,950	131,222	6,423	36,935		31,992	244,550		576	2	183,895		184,473	
1893	6,588	28,187	198,777	16,751	23,870	864	36,352	311,389		344		206,827		207,171	
1894	17,795	53,846	105,329	28,095	27,621		60,462	198,358		297		188,521		188,818	
1895	10,169	27,881	100,512	7,904	17,020		46,316	209,802	181	246		149,490		149,917	
1896	16,224	34,878	175,094	11,128	16,137	490	46,456	300,407		146		207,348		207,494	
1897	7,237	28,919	169,057	14,173	14,969		41,887	276,242		15		165,143		166,123	
1898	4,212	11,268	150,667	6,909	12,732	1,197	22,671	209,656		339	4	156,814		157,927	
1899	6,118	12,926	81,777	2,424	19,526	923	18,198	141,892		1,646	553	88,931		91,481	
1900	7,966	18,771	60,545	2,402	39,706	2,149	14,248	145,787		953		46,024		46,977	
1901	7,165	23,557	55,531	7,119	26,344		14,016	143,732	83	80	105	46,702		46,970	
1902	13,755	32,639	66,111	7,415	10,006		12,675	142,634		214		12,911		13,125	

\* Apples, meal of all kinds, peas, potatoes.



## SESSIONAL PAPER No. 20a

C.—Table showing the Tonnage of the undermentioned Articles passed through the Welland canal in transit between Ports in the United States during a series of forty-six years, ended December 31, 1916—*Concluded*.

Years.	Vegetable Food							Heavy Goods.						
	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	*Other	Total Articles.	Railway Iron.	Other Iron.	Sugar and Salt.	Coal.	Ons.	Total
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1903	6,082	15,439	108,917	11,433	6,112	4,175	13,568	165,725	459			113,072		113,535
1904	8,556	14,269	60,964	16,621	16,497		13,079	129,986				63,882		63,882
1905	24,054	15,483	93,622	9,197	10,892		9,682	162,930		1		73,464		73,465
1906	15,215	13,410	135,410	9,266	11,323		10,678	195,132		169		33,523		33,692
1907	18,898	21,892	124,474	2,812	4,741	2	22,001	194,820		30		110,347	4,050	114,420
1908	17,694	24,651	99,830	7,418	2,070	2	21,393	172,788				158,351	1,400	159,751
1909	15,452	17,940	100,967	4,224			22,683	161,266		5		131,131	1,531	132,667
1910	11,859	10,717	126,938	3,840			8,751	161,925				201,893		201,893
1911	2,852	4,950	116,705				7,565	132,072		1,863	26,303	223,942	4,480	256,491
1912	9,878	15,911	91,254	2,160	1,400		12,714	133,317		300	11,078	166,419	4,970	182,776
1913	11,967	20,258	114,662		7,407		8,685	162,979		505	18,387	237,230	5,202	261,324
1914	8,580	32,657	85,700		5,210		10,278	142,425			25,258	236,976	6,341	268,575
1915	4,124	22,310	89,269	690	457		5,152	122,022			15,705	235,929	17,972	269,606
1916		7,530	30,838		1,559			39,927		1,603		131,870	16,373	149,246

\*Apples, meal of all kinds, pease, potatoes.



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A —TABLE showing the total tonnage of the undermentioned articles moved Up  
December

Year.	Vegetable Food.						
	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Articles. †
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons..	Tons.
1869*	45,674	313,825	120,599	20,951	.....	904	1,937
1872.....	26,651	239,998	254,902	6,035	7,752	64	2,745
1873.....	20,665	355,847	180,169	8,225	1,194	3	3,777
1874.....	24,019	413,212	181,151	18,871	5,954	513	8,677
1875.....	13,964	253,835	103,749	35,751	3,383	917	6,337
1876.....	15,778	201,906	144,501	18,455	24,496	1,454	3,198
1877.....	13,558	253,953	169,196	19,870	2,810	2,439	2,355
1878.....	9,121	191,982	185,931	10,979	3,088	.....	2,302
1879.....	10,710	274,570	144,506	4,655	1,239	40	2,444
1880.....	12,679	242,020	163,738	17,772	477	1,016	1,480
1881.....	9,959	127,832	101,075	24,509	.....	1,844	2,086
1882.....	12,261	215,056	54,799	20,126	611	3,226	403
1883.....	13,471	152,794	182,269	10,436	731	1,642	10,983
1884.....	13,683	144,851	118,811	7,155	10,746	1,320	9,168
1885.....	13,334	124,206	117,536	15,801	1,116	.....	1,912
1886.....	19,474	154,169	219,442	1,595	4,911	564	14,657
1887.....	23,949	221,927	114,938	9,574	12,050	.....	12,533
1888.....	16,983	160,963	194,886	5,906	26,629	811	13,608
1889.....	7,931	126,664	353,595	4,272	28,356	2,673	18,552
1890.....	14,461	118,002	327,394	10,830	27,728	1,549	20,876
1891.....	13,517	198,658	185,180	8,113	52,959	64,888	28,042
1892.....	17,046	232,019	192,548	6,433	37,173	9,392	32,815
1893.....	15,235	258,392	441,092	18,599	31,283	3,671	36,981
1894.....	33,628	270,993	169,233	28,353	27,962	567	60,673
1895.....	44,044	203,088	164,894	8,689	18,236	1,007	46,463
1896.....	42,425	320,563	320,444	11,368	28,178	9,405	56,591
1897.....	9,065	324,743	390,615	14,173	25,161	8,483	44,674
1898.....	5,578	207,647	437,861	12,286	17,502	16,127	23,182
1899.....	11,625	197,732	204,004	2,907	24,037	923	18,460
1900.....	10,968	137,800	163,509	4,035	41,055	3,538	14,815
1901.....	18,978	151,586	67,746	7,119	28,485	2,961	14,024
1902.....	22,282	225,171	67,647	7,418	11,232	4,079	12,963
1903.....	25,998	259,031	210,758	14,656	7,911	4,904	13,994
1904.....	35,049	165,138	116,444	27,171	16,582	.....	13,183
1905.....	38,512	254,458	180,921	55,432	36,072	1,711	9,883
1906.....	18,294	326,798	211,805	31,446	49,306	1,784	10,739
1907.....	22,739	488,565	271,693	13,240	73,369	2,270	22,683
1908.....	23,209	732,131	127,402	31,172	33,423	6,667	21,668
1909.....	38,763	590,196	140,902	23,151	75,135	33	30,221
1910.....	41,152	587,493	229,980	21,575	136,233	.....	18,149
1911.....	57,061	562,282	273,932	15,029	163,333	112	11,360
1912.....	45,807	795,989	121,333	25,241	185,546	714	14,626
1913.....	45,710	1,005,362	144,354	96,889	199,794	6,867	10,640
1914.....	87,701	1,599,909	112,133	89,622	225,668	10,220	10,318
1915.....	15,117	955,181	121,086	26,231	169,046	.....	5,999
1916.....	200	336,204	78,420	58,921	196,353	10,886	.....

\*Fiscal. †Apples, meal of all kinds, pease, potatoes.



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and Down, through the Welland canal, during a period of forty-six years, ended 31, 1916.

Total.	Railway Iron.	Other Iron.	Sugar and Salt.	Iron & Salt having paid full tolls on St. Lawrence canals.	Coal.	Ores.	Total.
Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
503,860	46,806	16,924	91,575	37,153	103,126	58,781	275,623
538,147	26,217	17,141	50,540	44,243	186,932	98,605	3,678
579,880	6,923	20,754	40,850	17,157	339,016	118,685	43,387
647,397	6,032	12,068	23,309	9,579	323,503	56,825	431,316
417,936	1,517	7,588	13,509	9,962	321,306	43,683	397,565
409,788	51	7,997	30,300	20,327	288,211	81,654	378,540
464,181	9,630	9,696	9,173	3,983	323,869	42,758	399,109
403,403	10	11,518	3,980	12,686	295,318	15,229	338,741
438,564	2,782	5,797	7,174	17,796	192,957	19,164	245,670
442,182	5,360	4,812	413	22,273	109,986	34,139	176,983
269,395	4,585	7,013	10	30,682	128,113	18,785	189,188
306,482		5,348	50	17,327	237,559	23,700	283,984
373,326	1,237	7,922	66	17,037	307,058	31,785	365,105
305,734	698	652	461	3,242	274,471	53,205	332,729
273,905	78	2,055	597	14,243	248,272	26,728	291,973
414,812	166	6,123	48	12,324	271,356	27,447	317,464
394,971	1,351	5,636		6,715	145,193	13,866	172,761
419,786	93	3,220	316	13,617	223,871	16,872	257,989
542,043	47	2,479	1,254	20,269	268,305	2,435	294,789
519,291		753	1,027	28,047	202,384	8,138	240,249
367,177	127	1,610	2,567	7,953	224,644	3,415	240,316
527,426	163	1,567	878	3,666	211,616	355	218,245
805,253	6	2,075	374	8,139	233,096		243,690
591,409		3,072	159	977	203,608		207,816
486,421	185	6,245	54	2,819	158,866	1,140	169,309
788,974	1,192	6,332	82	3,264	223,445	1,158	235,473
816,914	7,206	17,012	227	590	176,226		201,261
720,183	1,444	11,722	799	734	162,336	13,433	190,468
459,688	567	6,361	1,282	1,318	97,732	26,125	133,385
375,720		8,190	533	4,800	47,392	58,400	119,315
290,909	83	6,094	327	8,773	49,480	99,487	164,244
350,792	64	7,488		15,201	64,014	22,480	109,247
537,252	488	5,407	2,554	45,846	147,884	18,323	220,502
373,568	11,381	9,957	1,093	4,164	113,525	39,683	179,803
576,989	2,651	10,912	226	4,221	172,642	22,381	213,033
650,172	3,747	8,493	100	16,204	147,587	5,862	181,993
894,659	961	4,923	246	18,761	267,212	25,040	317,143
975,672		35,726	429		316,921	18,004	371,080
898,401		87,025			377,681	33,301	498,007
1,034,582		57,581			577,491	34,211	669,383
1,083,109		126,956	35,888		619,682	37,480	820,006
1,189,256		139,991	21,630		709,696	82,376	953,693
1,509,616		96,245	28,396		945,790	78,776	1,139,207
2,135,571		34,037	35,060		949,306	14,151	1,032,554
1,292,660		46,039	30,250		935,824	49,339	1,061,452
680,984		10,882	10,113		1,190,142	210,902	1,401,044



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B.—TABLE showing the Total Way and Through Tonnage of the under-mentioned articles cleared downward on the Welland canal during a series of forty-six years, ended December 31, 1916.

## VEGETABLE FOOD.

Years.	Flour.	Wheat.	Corn.	Barley.	Oats.	Rye.	Other Articles. †	Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1869.....	44,110	310,090	119,541	3,920	.....	680	1,541	479,882
1872.....	26,648	231,056	254,534	693	7,594	64	2,300	524,889
1873.....	30,660	345,720	180,042	643	1,188	3	3,557	563,813
1874.....	24,017	406,157	181,128	377	5,953	.....	3,301	620,933
1875.....	13,930	248,555	103,477	813	3,383	500	4,304	374,962
1876.....	15,735	194,559	144,501	1,110	24,496	1,454	2,949	384,807
1877.....	13,588	248,894	169,185	10,216	2,810	2,405	1,833	488,931
1878.....	8,854	188,106	185,931	1,217	3,088	.....	2,100	389,296
1879.....	10,588	271,545	114,276	803	1,196	.....	2,387	430,795
1880.....	12,467	240,601	162,891	.....	477	.....	1,417	417,853
1881.....	9,655	121,393	103,075	252	.....	6	1,371	235,752
1882.....	12,205	205,876	54,797	537	.....	1,954	225	275,594
1883.....	13,256	146,741	182,143	975	731	518	10,971	355,335
1884.....	13,626	135,804	118,811	270	10,746	477	9,018	288,752
1885.....	13,322	114,090	117,536	618	1,116	.....	1,628	248,310
1886.....	19,418	146,151	218,897	.....	4,891	.....	14,581	403,928
1887.....	23,940	210,755	114,938	1,711	12,050	.....	12,149	375,543
1888.....	16,973	150,833	194,886	555	26,629	811	13,358	404,045
1889.....	7,922	120,498	353,595	197	28,356	1,918	18,273	530,759
1890.....	14,461	114,924	327,394	6,519	27,728	1,121	20,836	512,983
1891.....	13,517	196,326	185,177	8,113	52,959	65,071	27,895	549,058
1892.....	17,046	229,569	192,548	6,433	37,173	9,392	32,548	524,709
1893.....	15,232	257,203	441,092	18,461	31,283	3,671	36,981	803,923
1894.....	33,628	270,514	169,233	28,353	27,962	.....	60,587	590,277
1895.....	43,895	202,636	164,894	8,689	18,236	.....	46,435	484,785
1896.....	42,159	319,388	320,444	11,368	28,178	8,970	54,031	784,538
1897.....	9,025	322,993	390,615	14,173	25,127	8,483	44,651	815,067
1898.....	5,578	206,313	437,849	12,286	17,491	16,127	23,170	718,814
1899.....	11,625	197,732	204,004	2,424	23,541	923	18,440	458,689
1900.....	10,968	137,800	163,509	3,449	40,256	3,538	14,802	374,322
1901.....	18,937	151,325	67,757	7,119	28,281	2,961	14,021	290,400
1902.....	22,282	223,499	67,647	7,418	11,223	4,079	12,912	349,060
1903.....	25,997	257,370	210,758	14,656	7,911	4,904	13,982	535,578
1904.....	35,046	164,515	116,444	27,171	16,582	.....	13,157	372,915
1905.....	38,512	247,599	180,921	55,432	36,072	1,711	9,882	570,129
1906.....	18,227	326,789	111,243	31,446	49,306	1,411	10,739	549,161
1907.....	22,689	488,565	271,693	13,240	73,369	2,270	22,683	894,509
1908.....	23,187	730,751	127,402	31,172	33,423	6,667	21,668	974,270
1909.....	38,763	590,074	140,902	23,151	75,135	33	30,206	898,264
1910.....	41,152	587,493	229,980	21,575	136,233	.....	18,149	1,034,582
1911.....	57,061	562,282	273,932	14,622	163,333	112	11,360	1,082,702
1912.....	45,807	795,989	121,333	25,241	185,546	714	14,626	1,189,256
1913.....	45,710	1,005,362	144,354	96,889	199,794	6,867	10,640	1,509,616
1914.....	87,701	1,599,909	112,333	89,622	225,668	10,220	10,318	2,135,571
1915.....	15,087	946,004	121,086	26,231	168,876	.....	5,999	1,283,283
1916.....	200	336,204	78,420	58,921	196,353	10,886	.....	680,984

\*Fiscal. †Apples, meal all kinds, potatoes.



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## VEGETABLE FOOD.

D.—STATEMENT showing the Quantity of Through Freight passed down the Welland canal in Canadian and United States vessels entering the canal at Port Colborne, during the Season of Navigation in 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915 and 1916.

Articles.	Canadian Vessels.				United States Vessels.				Total.
	Steam.		Sail.		Steam.		Sail.		Steam and Sail.
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No. Tonnage.
	252	182,373	91	48,692	319	286,656	64	29,120	726 546,841
1905.									
		Tons.		Tons.		Tons.		Tons.	Tons.
Wheat.....		188,706		18,575		28,757		2,512	238,550
Corn.....		6,385		6,636		163,374		4,526	180,921
Barley.....		6,870		1,451		47,111			55,432
Oats.....		8,225		2,570		21,535		3,742	36,072
Peas.....						76			76
Rye.....						1,171			1,711
Coal.....		18,756		35,324		28,330		8,678	91,088
Iron ore.....		14,358		8,023					22,381
Merchandise.....		29,375		7,485		74,975		3,126	114,961
Shingles, woodenware, etc....				2,748,941		2,325			2,325
Sawed lumber..... Ft. B.M.		2,867,147				38,290,831		12,479,689	54,589,200
Square timber..... Cub. ft.		355,000		951,524					538,000
Firewood..... Cords				183,000		900			900
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No. Tonnage.
	328	238,690	121	65,355	305	310,622	43	15,758	797 631,425
1906.									
		Tons.		Tons.		Tons.		Tons.	Tons.
Wheat.....		250,493		34,355		35,578			320,426
Corn.....		8,177				202,250		1,378	49,306
Barley.....		8,546		5,046		17,854			31,446
Oats.....		21,900		16,083		11,323			49,306
Peas.....						11			11
Rye.....				5		1,406			1,411
Coal.....		30,455		47,242		24,190		9,356	111,243
Iron ore.....		5,862							5,862
Merchandise.....		35,383		7,009		110,263		50	152,705
Shingles, woodenware, etc....				37		851			904
Sawed lumber..... Ft. B.M.		3,471,514		235,624		25,711,196		10,789,755	40,188,089
Square timber..... Cub. ft.		375,000		200,000					575,000
Firewood..... Cords.		110		18		1,093			1,221
Staves..... No.						300,000			300,000
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No. Tonnage.
	375	290,509	148	81,070	408	397,616	76	36,921	1007 816,116
1907.									
		Tons.		Tons.		Tons.		Tons.	Tons.
Wheat.....		294,298		50,808		130,818		4,429	480,303
Corn.....		6,713		514		259,895		4,571	271,693
Barley.....		8,726		468		4,046			13,240
Oats.....		49,689		16,647		7,033			73,369
Peas.....						25			25
Rye.....						2,270			2,270
Coal.....		31,506		57,373		50,183		14,493	143,555
Iron ore.....		12,040		8,950					20,990
Merchandise.....		21,545		9,436		5,231		6,235	42,447
Shingles, woodenware, etc....						2,222			2,222
Sawed lumber..... Ft. B.M.						14,395,124		11,201,446	25,596,570
Square timber..... Cub. ft.		558,090		323,000					881,090
Firewood..... Cords						660			660



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D.—STATEMENT showing the Quantity of Through Freight passed down the Welland canal in Canadian and United States vessels, etc.—Continued.

Articles.	Canadian Vessels.				American Vessels.				Total.
	Steam.		Sail.		Steam.		Sail.		Steam and Sail.
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	567	432,623	149	64,034	428	319,030	36	19,866	1180   835,553
1908.		Tons.		Tons.		Tons.		Tons.	Tons.
Wheat.....		505,151		39,001		183,011		3,498	730,751
Corn.....		2,405				124,997			127,402
Barley.....		19,775		1,133		10,264			31,172
Oats.....		30,091		643		2,689			33,423
Peas.....						40			40
Rye.....		742				5,925			6,667
Coal.....		33,733		42,656		57,448		8,334	148,181
Merchandise.....		26,815		14,783		14,410		13,686	69,694
Firewood.....Cords.				70		1,173			1,243
Sawed lumber.....Ft. b.m.						17,572,070		6,578,545	24,150,615
Square timber.....Cub. ft.		221,300		313,000					534,300
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	555	486,406	136	71,034	323	324,576	26	17,317	1040   899,333
1909.		Tons.		Tons.		Tons.		Tons.	Tons.
Wheat.....		415,208		34,903		133,172			583,283
Corn.....		6,694				134,208			140,902
Barley.....		17,943		360		4,848			23,151
Oats.....		70,392		4,743					75,135
Peas.....						63			63
Rye.....		33							33
Coal.....		160,475		53,681		21,097		630	235,883
Merchandise.....		52,994		14,732		12,232		16,498	96,506
Sawed lumber.....						31,643		10,214	41,857
Square timber.....		3,450		7,840		125		1,475	12,890
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	596	599,416	142	88,963	249	285,704	14	13,563	1001   987,646
1910.		Tons.		Tons.		Tons.		Tons.	Tons.
Wheat.....		481,624		22,200		77,040			580,864
Corn.....		15,759				214,221			229,980
Barley.....		17,159		576		3,840			21,575
Oats.....		135,743				490			136,233
Peas.....						123			123
Rye.....									
Coal.....		216,679		114,671		29,646		894	361,990
Merchandise.....		39,149		15,231		21,818		20,466	96,664
Sawed lumber.....		3,630		800		16,932			21,362
Square timber.....		1,930		5,000		800			7,730
Shingles.....						525			525
Unenumerated.....		74,434		1,772		24,031			100,237
Total.....		986,207		160,250		389,466		21,360	1,557,283



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D.—STATEMENT showing the quantity of Through Freight passed down the Welland canal in Canadian and United States vessels, etc.—*Continued.*

Articles.	Canadian Vessels.				American Vessels.				Total.
	Steam.		Sail.		Steam.		Sail.		Steam and Sail.
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	640	670,037	122	83,755	270	304,171	48	42,830	1080   1,100,793
1911.		Tons.		Tons.		Tons.		Tons.	
Wheat .....		483,984		24,826		49,330			558,140
Corn .....		29,978		11,368		232,586			273,932
Barley .....		14,382		240					14,622
Oats .....		162,455		878					163,333
Peas .....									
Rye.....		112							112
Coal .....		230,809		79,311		40,109		22,489	372,718
Merchandise.....		45,838		19,325		45,881		34,449	145,493
Sawed lumber.....		300				25,361		9,020	34,681
Square timber.....		3,260		4,500		2,277			10,037
Shingles.....						60			60
Unenumerated.....		95,017				14,386			109,403
Total.....		1,066,135		140,448		409,990		65,958	1,682,513
1912.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	774	790,044	152	95,202	450	427,226	52	33,102	1428   1,345,574
		Tons.		Tons.		Tons.		Tons.	
Wheat .....		603,854		78,794		111,284			793,932
Corn .....		536		2,181		118,616			121,333
Barley.....		22,022		353		2,866			25,241
Oats.....		170,446		3,269		11,831			185,546
Peas .....						150			150
Rye.....						714			714
Coal.....		331,536		44,212		514,653		3,800	534,201
Merchandise.....		48,659		17,602		47,836		32,340	146,437
Sawed lumber.....						22,689		15,361	38,050
Square timber.....		9,000		8,660		1,409			19,069
Shingles.....						250			250
Unenumerated.....		73,387		1,186		69,367			143,940
Total.....		1,259,440		156,257		541,665		51,501	2,088,863
1913.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	1043	1,081,973	148	104,194	375	386,284	28	18,908	1594   1,590,459
		Tons.		Tons.		Tons.		Tons.	
Wheat.....		761,418		87,153		154,768			1,003,339
Corn .....		1,549				142,805			144,354
Barley.....		82,241		2,448		12,200			96,889
Oats.....		188,442		1,937		9,415			199,794
Peas.....									
Rye.....		3,136				3,731			6,867
Coal .....		498,269		59,145		107,946		1,735	667,095
Merchandise.....		59,375		18,701		28,825		21,008	127,903
Sawed timber.....		1,500				19,200		3,756	24,436
Square timber.....		4,636		4,004		1,040			9,680
Shingles.....									
Unenumerated.....		183,957		9,059		76,613		3,550	273,179
Total.....		1,784,523		182,447		556,543		30,029	2,553,541



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D.—STATEMENT showing the Quantity of Through Freight passed down the Welland canal in Canadian and United States vessels, etc.—*Concluded.*

Articles.	Canadian Vessels.				United States Vessels.				Total.
	Steam.		Sail.		Steam.		Sail.		Steam and Sail.
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage
	1301	1,345,319	154	93,099	357	353,547	25 $\frac{3}{4}$	7,279	1837   1,799,244
1914.	Tons.		Tons.		Tons.		Tons.		Tons.
Wheat.....	1,268,410		101,833		189,666				1,559,909
Corn.....	4,973		1,422		105,738				112,133
Barley.....	80,488		4,423		4,711				89,622
Oats.....	210,795		3,699		10,982				225,476
Peas.....									
Rye.....	1,114				9,106				10,220
Coal.....	531,240		32,288		132,215		901		696,544
Merchandise.....	61,135		16,751		14,987				92,873
Sawed timber.....	450				17,285		1,670		19,405
Square timber.....	4,846				1,397				6,243
Shingles.....	175								175
Unenumerated.....	102,804				20,936		400		124,140
Total.....	2,266,430		160,416		507,023		2,871		2,936,740
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	856	885,441	161	105,309	285	310,071	7 $\frac{3}{4}$	2,133	1309   1,302,954
1915.	Tons.		Tons.		Tons.		Tons.		Tons.
Wheat.....	679,534		105,391		161,079				946,004
Corn.....	14,742		1,089		105,255				121,086
Barley.....	23,878		1,663		690				26,231
Oats.....	163,125		2,830		2,921				168,876
Peas.....					840				840
Rye.....									
Coal.....	465,649		51,975		160,162		1,490		679,276
Merchandise.....	97,085		18,105		37,862				153,052
Sawed lumber.....	2,543				17,565				20,108
Square timber.....	4,650				1,381				6,031
Shingles.....									
Unenumerated.....	22,972		1,159		8,499		1,170		33,800
Total.....	1,474,178		182,212		496,254		2,660		2,155,304
	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.	Tonnage.	No.   Tonnage.
	767	721,126	185	138,276	275	233,422	11	4,164	1238   1,096,988
1916.	Tons.		Tons.		Tons.		Tons.		Tons.
Wheat.....	136,791		161,673		37,740				336,204
Corn.....	10,698				67,722				78,420
Barley.....	57,932				989				58,921
Oats.....	190,522		2,386		3,445				196,353
Peas.....									
Rye.....					10,886				10,886
Coal.....	707,636		73,132		252,653		7,181		1,040,602
Merchandise.....	67,153		11,440		2,505				81,098
Sawed lumber.....					18,136				18,136
Square timber.....									
Shingles.....									
Unenumerated.....	22,246				28,168				50,414
Total.....	1,192,978		248,631		422,244		7,181		1,871,034



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## WELLAND CANAL THROUGH FREIGHT—RECAPITULATION.

## WELLAND CANAL—WESTBOUND FREIGHT.

The total quantity of Through Freight passed up the Welland canal in Canadian and United States vessels during the Season of Navigation in 1916 is as follows:—

Summary.	Tons.	Tons.
In Canadian steam vessels.....	240,717	241,217
“ sail vessels.....	500	
Total quantity in Canadian vessels.....		
In United States steam vessels.....	202,717	202,717
“ sail vessels.....		
Total in United States vessels.....		
Grand total freight passed up the Welland canal in Canadian and United States vessels.....		443,934

## STATEMENT of the Quantity of Through Freight passing up and down the Welland canal during the Season of Navigation in 1916.

Summary.	Tons.	Tons.
In Canadian steam vessels up.....	240,717	1,433,695
“ “ down.....	1,192,978	
Total Canadian steam vessels.....		
In Canadian sail vessels up.....	500	249,131
“ “ down.....	248,631	
Total in Canadian sail vessels.....		
Total quantity in Canadian vessels.....		1,682,826
In United States steam vessels up.....	202,717	624,961
“ “ down.....	422,244	
Total in United States steam vessels.....		
In United States sail vessels up.....		7,181
“ “ down.....	7,181	
Total in United States sail vessels.....		
Total quantity in United States vessels.....		632,142
Total in Canadian and United States Steam vessels.....		2,314,968
	Down or Eastbound.	Up or Westbound.
In Canadian vessels.....	1,441,609	241,217
In United States vessels.....	429,425	202,717
Total.....	1,871,034	443,934



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F.—STATEMENT showing the Quantity of Freight passed Eastward, from Lake Erie, through the whole length of the Welland and St. Lawrence canals, to Montreal, during the Seasons of Navigation 1904 to 1916.

Articles.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
<i>Class 3.</i>	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Cement and water lime	35					5,652	484			270			
Clay, lime and sand		22											
Iron, railway	8,170	10											
" " all other	1,651	384	269	124	553	12,689	7,154	1,901	28,996	93	430	2,575	
Steel	16	48						34,540		5,402	150	9,880	
Stone, for cutting.													
Apples	1			9,936									
Barley	9,697	43,607	21,196	105,984	24,318	19,143	20,000	14,853	20,572	60,854	56,784	25,108	56,455
Corn	55,021	84,204	55,559		10,454	17,137	77,612	134,239	7,345	9,344	6,031	18,643	27,517
Flaxseed	212	15,694	80,570	49,159	27,500	19,634	6,607	11,696	15,413	117,548	4,285	10,317	12,594
Flour	24,662	14,574	9,174	3,730	5,028	21,905	27,081	44,588	38,026	34,152	60,723	10,295	200
Meal, all kinds	57	270	60		156		10,323	3,967					
Oats		21,404	37,164	66,941	28,081	65,624	129,900	147,180	164,581	72,733	97,361	151,075	170,694
Oil cake	7,846	9,229											
Peas						30		20	10				
Rye		1,711	1,405	2,266	6,662	120			714	4,567	9,385		9,780
Salt	615	168	75	143	419				931	686	100	142	
Seed, all kinds				20									
Hay, pressed													
Tobacco, raw													
Wheat	133,528	190,505	289,611	450,446	686,626	550,775	562,149	541,174	768,633	763,851	1,184,645	925,201	330,267
All other agricultural products, vegetables						5,876					308	1,500	
Hides, skins, horns and hoofs	10		2										
Horses													
Lard and lard oil		2,847	4,810						41				
Meats, all kinds													
Pork					524								
Tallow		53											
All other agricultural products, animal	1					366							
Total, class 3	241,522	384,727	499,895	668,749	790,321	718,951	841,310	934,158	1,045,262	1,069,500	1,420,202	1,154,736	607,507



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Class 4.											
Agricultural implements		17									
Ashes	16										
Bricks											
Crockery	6	93									
Furniture	3	21									
Glass, all kinds		820	4								
Molasses		64									
Nails		20,700	19,995	22,111	30,002	31,149	26,932	45,930	52,871	67,576	53,880
Oil											
Paint.		53		101							
Pitch and tar											
Rags											
Resin		72		15							
Soda ash		2,019									
Sugar.		53				173	345	1,177	3,475	898	2,725
Tin	87	204									
Tobacco											
White lead											
Whisky, beer and other spirits	766	635	614	1,244	1,056	525	959	581	1,739	1,298	71
Merchandise not enumerated	713	851	466	2,294	2,126	10,418	9,224	11,254	13,601	4,270	1,900
Total, class 4	14,456	25,572	21,164	25,749	34,730	42,265	37,462	58,942	71,686	71,078	55,789
Class 5.											
Barrels, empty											
Hoops											
Sawed lumber		3,957	100					300			775
Staves, pipe and barrel	394		2,400								
Staves, West India and pipe											
Timber, sq., in vessels	1,544	1,260	1,500	4,180		900	1,800	1,360	5,560	3,444	4,650
Timber, sq., in rafts											
Woodenware											
Total, class 5	1,938	5,217	4,000	4,180		900	1,800	1,660	5,560	3,444	5,425
Special Class.											
Coal											
Iron ore	17,362	29,351	29,172	70,489	42,075	175,115	289,567	298,873	424,988	563,197	912,508
Stones, all kinds		3,837			1,272	1,824			12,467		9,342
Total, special class	17,362	33,188	29,172	70,489	43,367	176,939	289,567	298,873	437,455	563,197	912,508
Grand total	275,278	448,704	554,231	789,167	869,398	939,055	1,170,633	1,293,633	1,559,963	1,710,219	1,575,404



G.—STATEMENT showing the Quantity of Freight passed Westward from Montreal, through the whole length of the St. Lawrence and Welland canals to Lake Erie, during the Seasons of Navigation in 1904, 1905, 1906, 1907, 1909, 1910, 1911, 1912, 1913, 1914, 1915 and 1916.

Articles.	1904.	1905.	1906.	1907.	1909.	1910.	1911.	1912.	1913.	1914.	1915.	1916.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
Class 3.												
Bricks.....	115	132		556								
Brinstone.....	12											
Cement and water lime.....	39	181	88	13	400	17,565	8,625	40,074	36,890	18,000	10,168	6,265
Clay, lime and sand.....				100								
Cotton, raw.....												
Fish.....	4			39								
Gypsum.....												
Iron, railway.....	283	126	7,289	4,119								
" pig.....		312	680	7,655	7,231	2,060	2,300	2,598	675	7,268	734	585
" all other.....	3,782	3,633	8,235	6,987		540						
Salt.....	99	150	17									
Steel.....	58	192	111	2,561	35,153		22,352	66,544	49,692	10,602	9,080	1,745
Stone for cutting.....	41										30	
Flour.....		18										
Hay.....				30	255							
Meals.....	25					1,113						
Oats.....												
Potatoes.....												
Seeds, all kinds.....	164	35	17									
Tobacco, raw.....												
Agricultural products, not enumerated, vegetable.....		127										
Hides and skins.....												
Horses.....												
Lard and lard oil.....		28	20	1								
Meats, other than pork.....	25			15								
Pork.....							150	150	25	164		
Wool.....												
All other articles not enumerated.....												
Total, class 3.....	4,647	4,934	16,457	22,076	43,039	21,278	34,427	109,366	87,282	36,034	20,012	8,595







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II.—STATEMENT showing the Quantity of Freight passed Eastward and Westward through the Welland canal from United States Ports to United States Ports, during the Seasons of Navigation from 1904 to 1916, inclusive.

Articles.	1904.	1905.	1906.	1907.	1908.	1909.	1909.	1911.	1912.	1913.	1914.	1915.	1916.
<i>Class 3.</i>													
Bricks													
Cement and water lime										11,600			
Fish				20				91					
Iron, railway		1	27	30				1,86	300	505			55
Salt										238			
Steel			2	509									
Stone for cutting													
Apples													
Barley	16,621	9,197	9,266	2,812	7,148	4,224	3,840		2,160			690	
Corn	60,964	93,622	135,240	124,474	99,830	100,967	126,938	116,705	91,254	114,662	85,700	89,268	30,838
Flour	8,556	24,054	15,215	18,898	17,694		11,859	2,852	9,878	11,967	8,580	4,121	
Hay, pressed		200											
Meal, all kinds	13,076	9,606	10,668	21,976	21,353		9,621	7,565	12,569	8,685	10,278	5,152	
Marble		87											
Nails		1											
Oil cake	16,497	228		114									
Oats	3	10,892	11,323	4,741	2,070				1,400	7,407	5,219	457	1,559
Peas		76	11	25	40	63	123		150				
Potatoes													
Rye				2	2								
Flax seed			756			15,452							
Seeds, all kinds		43	3	17									
Tobacco													7,530
Wheat	14,269	15,483	13,410	21,802	24,651	17,940	10,707	4,950	15,911	20,258	32,657	22,310	
Agricultural products, vegetable			1	7		22,620		19	37			6	
Hides and skins, etc					21	315	233						
Horses			22	86									
Lard and lard oil, etc.													
Meats, other than pork													
Pork	379	273	268	429	190								
Sheep													
Tallow													
Wool	134	21	89	30		157	233	9					
Total, class 3	130,301	163,301	196,301	196,061	182,085	161,738	164,654	134,054	133,659	184,782	142,425	122,008	39,982



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<i>Class 4.</i>												
Agricultural implement's	396	552	494									
Crockery and earthen-ware			1	5								
Furniture												
Marble												
Molasses												
Nails				3								
Oil, in barrel	1			8								
Paint	17	42	1	1	15							
Rags		4			1							
Soda ash												
Stone, wrought												
Sugar	53	53	840	26,075								
White lead		7		4								
Whiting				21								
Whisky, beer and all other spirits												
Merchandise	1,554	2,008	2,324	41,621	1,839	5,866	122	67,860	230	137	109	7,548
Total, class 4	2,021	2,666	3,660	67,768	1,857	7,316	67,890	90,939	78,698	104,826	82,563	7,548
<i>Class 5.</i>												
Empty barrels	717	3	3,629	1								
Firewood, in vessels		2,700		1,980	3,509		1,531	2,046	2,394			
Lumber, sawn, in vessels	30,194	15,726	27,701	14,314	21,571	24,327	11,738	30,191	26,614	16,424	17,589	13,629
Masts and spars, in vessels												
Hop poles	154											
Railway ties, in vessels	652	2,218		2,151	478							
Shingles		62	53	70								
Split posts		12										
Staves, salt barrels			1,500									
Timber, square, in vessels												
Woodenware, etc												
Total, class 5	31,717	20,751	32,865	18,516	25,558	27,384	14,877	32,237	32,001	18,487	21,280	13,629
<i>Special Class.</i>												
Coal	1,100	3,346	4,400	100,347		400	201,893	223,942	166,419	237,230	236,976	131,870
Stone, suitable not for cutting												
Kryolite				2,734								
Iron ore				1,316			1,552	4,483	4,979	5,202	6,341	1,003
Total, special class	1,100	3,346	4,400	114,397		400	203,445	228,425	171,398	242,432	243,317	142,248
Grand total	165,337	190,547	237,226	396,743	209,518	193,838	450,776	485,355	415,756	525,333	485,616	193,407



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L.—STATEMENT of the quantity of Grain Transhipped to the following Ports for the season of 1916.

Ports.	Wheat.	Oats.	Barley.	Corn.	Other grain.	Total.	Total.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.	Tons.
Kingston.....	1,172,536	53,195	150,584	128,500	.....	.....	47,933
Prescott.....	.....	.....	.....	.....	.....	.....	.....
Ogdensburg....	.....	.....	.....	.....	.....	.....	3,598
Total bushels..	1,172,536	53,195	150,584	128,500	.....	1,504,815	.....
Total tons....	35,176	9,143	3,614	3,598	.....	.....	51,531

M.—The quantity of Coal passed through the Welland canal during a series of years from 1885 to 1916 inclusive, is as follows:—

Years.	From Canadian Ports to Canadian Ports.	From Canadian Ports to Canadian Ports.	From United States Ports to United States Ports.		From United States Ports to Canadian Ports.		Total.
	Up.	Down.	Up.	Down.	Up.	Down.	
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1885.....	.....	.....	193,442	4,974	10,321	31,350	240,087
1886.....	.....	.....	184,564	5,400	22,187	49,724	261,875
1887.....	.....	.....	81,617	1,163	26,775	25,968	135,523
1888.....	.....	.....	172,381	878	17,365	27,183	217,807
1889.....	.....	.....	226,352	1,124	12,036	25,931	265,443
1890.....	80	.....	116,616	615	17,280	22,781	202,372
1891.....	.....	.....	185,190	1,382	17,374	20,698	224,644
1892.....	.....	.....	183,244	651	12,391	15,330	211,616
1893.....	.....	.....	204,704	2,123	8,325	17,944	233,096
1894.....	.....	.....	187,794	727	1,269	13,947	203,737
1895.....	4	.....	148,887	603	1,565	7,807	158,866
1896.....	20	210	206,093	1,255	4,127	11,740	223,443
1897.....	.....	4	165,143	.....	1,277	9,799	176,225
1898.....	.....	.....	156,055	759	986	4,536	162,336
1899.....	.....	.....	86,638	2,293	525	8,276	97,732
1900.....	8	.....	45,032	992	.....	1,360	47,392
1901.....	.....	.....	46,345	357	456	2,322	49,480
1902.....	.....	.....	12,410	501	65	51,037	64,013
1903.....	3	.....	113,076	.....	4,796	30,009	147,884
1904.....	2,919	.....	62,782	1,100	3,711	32,813	103,325
1905.....	.....	.....	70,118	3,346	11,436	37,742	172,642
1906.....	60	.....	29,123	4,400	7,161	106,843	147,587
1907.....	2,857	.....	110,347	.....	10,453	143,555	267,212
1908.....	4,401	.....	158,351	.....	5,988	148,181	316,921
1909.....	.....	.....	130,731	400	11,067	235,483	377,681
1910.....	2,045	.....	197,482	4,411	15,974	357,579	577,491
1911.....	731	.....	221,752	2,160	24,451	370,558	619,682
1912.....	.....	.....	163,461	2,958	12,034	531,243	709,696
1913.....	.....	.....	235,730	1,500	42,965	665,595	945,790
1914.....	.....	.....	236,976	.....	13,107	699,223	949,306
1915.....	.....	71	235,929	.....	4,015	695,809	935,824
1916.....	750	28	130,670	1,200	1,350	1,056,144	1,190,142



## SESSIONAL PAPER No. 20a

N.—STATEMENT showing the quantity of Coal passed through the whole length of the St. Lawrence canals during the season of 1885 to 1916 inclusive.

Years.	Quantity passed up.	Quantity passed down to Montreal.	Total Quantity passed up and down.
	Tons.	Tons.	Tons.
1885.....	5,035	122,829	127,864
1886.....	3,301	118,802	122,103
1887.....	7,579	121,618	129,197
1888.....	8,341	123,050	131,391
1889.....	5,360	124,290	129,650
1890.....	6,538	135,168	141,706
1891.....	7,951	141,701	149,652
1892.....	7,543	157,134	164,677
1893.....	2,285	147,139	149,424
1894.....	16,213	169,552	185,765
1895.....		165,151	165,151
1896.....	689	161,551	162,240
1897.....	40	164,963	165,003
1898.....	400	175,609	176,009
1899.....	448	201,546	201,994
1900.....	10	280,169	280,179
1901.....	2,765	298,245	301,010
1902.....	9,231	95,702	104,933
1903.....	30	290,548	290,578
1904.....	9,670	320,973	330,643
1905.....	8,518	345,589	354,107
1906.....	6,989	313,080	320,069
1907.....	1,281	406,978	408,259
1908.....	23,939	448,140	472,079
1909.....	13,543	469,695	483,238
1910.....	7,351	746,926	754,277
1911.....	6,230	756,474	762,704
1912.....	9,300	903,237	912,537
1913.....	3,500	1,225,288	1,228,788
1914.....	7,750	1,038,127	1,045,877
1915.....	7,644	1,025,821	1,033,465
1916.....	8,447	1,679,857	1,688,300



7 GEORGE V, A. 1917

O.—STATEMENT showing the quantity of Through Freight passed down the Welland canal, etc.

RECAPITULATION.

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports on Lake Ontario.
1905.	Tons.	Tons	Tons.
Barley.....	43,607	2,628	9,197
Corn.....	84,204	3,095	93,622
Oats.....	21,404	3,776	10,892
Peas.....			76
Rye.....	1,711		
Wheat.....	190,505	32,562	15,483
Total, grain.....	*341,431	42,061	129,270
Other articles.....	107,273	123,225	104,747
Total.....	448,704	165,286	234,017
1906.			
Barley.....	21,196	984	9,266
Corn.....	55,559	15,688	140,558
Oats.....	37,164	819	11,323
Peas.....		11	
Rye.....	1,405	II	
Wheat.....	***289,611	15,843	14,972
Total grain.....	404,935	33,351	176,119
Other articles.....	118,224	176,277	59,884
Total.....	523,159	209,628	236,003
1907.			
Barley.....	9,936	492	2,812
Corn.....	106,299	31,901	133,493
Oats.....	67,063	1,565	4,741
Peas.....			25
Rye.....	2,266	2	2
Wheat.....	450,009	8,072	22,222
Total grain.....	635,573	42,032	163,295
Other articles.....	153,594	126,423	93,127
Total.....	789,167	168,455	256,422
1908.			
Barley.....	24,318	3,546	3,308
Corn.....	10,454	11,489	105,459
Oats.....	28,081	3,272	2,070
Peas.....			40
Rye.....	6,662	3	2
Wheat.....	1686,626	19,832	24,293
Total grain.....	756,141	38,141	135,172
Other articles.....	108,785	162,378	91,875
Total.....	864,926	200,520	227,047



SESSIONAL PAPER No. 20a

O.—STATEMENT showing the Quantity of Through Freight passed down the Welland canal, etc.—*Continued.*RECAPITULATION—*Continued.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports on Lake Ontario.
1909.	Tons.	Tons.	Tons.
Barley.....	19,143		4,008
Corn.....	17,137	22,798	100,967
Oats.....	65,624	2,872	6,639
Peas.....	30		33
Rye.....	33		
Wheat.....	550,775	14,568	17,940
Total grain.....	652,742	40,238	129,587
Other articles.....	272,263	113,970	126,223
Total.....	925,005	154,208	255,810
1910.			
Barley.....	20,000		1,575
Corn.....	77,612	49,326	103,042
Oats.....	129,900	6,333	
Peas.....			128
Rye.....			
Wheat.....	562,149	7,998	10,717
Total grain.....	789,661	66,657	115,457
Other articles.....	380,500	152,325	55,633
Total.....	1,170,161	215,982	171,140
1911.			
Barley.....	14,331	291	
Corn.....	134,239	22,988	116,705
Oats.....	147,180	16,153	
Peas.....			
Rye.....		112	
Wheat.....	541,174	12,016	4,950
Total grain.....	836,924	51,560	121,655
Other articles.....	500,881	115,721	55,790
Total.....	1,337,805	167,281	177,445
1912.			
Barley.....	20,572	218	4,451
Corn.....	7,345	1,372	112,616
Oats.....	164,581	20,965	
Peas.....	10	12	128
Rye.....	714		
Wheat.....	768,633	25,299	
Total grain.....	961,855	47,866	117,195
Other articles.....	598,108	214,395	69,444
Total.....	1,559,963	262,261	186,639



7 GEORGE V, A. 1917

O.—STATEMENT showing the Quantity of Through Freight passed down the Welland canal, etc.—*Concluded.*

Articles.	Quantity passed down to Montreal.	Quantity passed down to Canadian Ports between Port Dalhousie and Cornwall.	Quantity passed down to United States Ports on Lake Ontario.
1913.	Tons.	Tons.	Tons.
Barley.....	91,856	5,033	.....
Corn.....	9,344	20,348	114,662
Oats.....	173,827	17,560	7,407
Peas.....	.....	.....	.....
Rye.....	4,567	2,300	.....
Wheat.....	985,774	17,565	.....
Total grain.....	1,265,368	63,806	122,069
Other articles.....	916,254	135,742	50,303
Total.....	2,181,622	199,548	172,372
1914.			
Barley.....	89,622	.....	.....
Corn.....	6,031	85,700	20,402
Oats.....	204,166	5,210	16,292
Peas.....	.....	.....	.....
Rye.....	9,385	.....	835
Wheat.....	1,527,252	.....	32,657
Total grain.....	1,836,456	90,910	70,186
Other articles.....	855,855	46,652	36,681
Total.....	2,692,311	137,562	106,867
1915.			
Barley.....	25,108	433	690
Corn.....	18,643	13,174	89,269
Oats.....	151,075	17,344	457
Peas.....	.....	840	.....
Rye.....	.....	.....	.....
Wheat.....	925,201	1,409	19,394
Total grain.....	1,120,027	33,200	109,810
Other articles.....	778,273	74,677	39,317
Total.....	1,898,300	107,877	149,127
1916.			
Barley.....	58,921	.....	.....
Corn.....	31,114	16,468	30,838
Oats.....	179,037	17,316	.....
Peas.....	.....	.....	.....
Rye.....	9,780	1,106	.....
Wheat.....	330,267	.....	5,937
Total grain.....	609,119	34,890	36,775
Other articles.....	1,192,087	154,031	18,441
Total.....	1,801,206	188,921	55,216



## SESSIONAL PAPER No. 20a

TABLE 1.—Comparative Statement of Grand Total Freight passed through the undermentioned Canals during the Seasons of Navigation 1915 and 1916.

	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Down.	Up.	Down.	Up.	Down.	Up.	Down.				
										Canadian.		United States.	
1915.													
Sault Ste. Marie.....	287,474	1,614,502	14,987	582,654	176,083	4,691,580	333,705	49,972	812,249	6,938,708	7,750,957	2,561,734	5,189,223
Welland.....	180,710	1,105,813	242,286	2,519	329,449	156,167	4,015	1,040,053	756,460	2,304,552	3,061,012	1,426,256	1,634,656
St. Lawrence.....	421,377	1,324,318	401,244	4	42	405	1,874	1,260,293	824,537	2,584,930	3,409,497	2,024,755	1,384,712
Chambly.....	5,648	6,325	280,218	.....	.....	.....	.....	186,516	285,866	192,841	478,707	292,191	186,516
St. Peters.....	491	2,404	.....	.....	.....	.....	.....	.....	491	2,404	2,895	.....	.....
Murray.....	25,696	3,066	.....	.....	.....	.....	.....	1,966	25,696	5,032	30,728	27,942	2,786
Ottawa.....	43,882	165,817	.....	58,154	.....	.....	4,516	.....	48,399	223,971	272,370	267,405	4,964
Rideau.....	72,852	41,410	125	.....	.....	.....	.....	6,394	7,977	47,804	120,781	114,358	6,423
Trent.....	13,083	36,821	.....	.....	.....	.....	.....	.....	13,083	36,821	49,904	49,904	.....
St. Andrews.....	21,800	182	.....	.....	.....	.....	.....	.....	21,800	182	21,982	21,982	.....
Grand total.....	1,073,014	4,300,658	938,860	643,331	505,574	4,848,152	344,110	2,545,104	2,861,558	12,337,245	15,198,863	6,789,423	8,409,380
1916.													
Sault Ste. Marie.....	338,901	2,886,970	2,810	887,239	384,454	11,467,241	704,378	141,656	1,430,543	15,383,106	16,813,649	4,155,911	12,657,738
Welland.....	157,060	675,282	193,165	3,057	148,046	55,361	1,350	1,311,643	499,621	2,045,343	2,544,964	1,054,480	1,490,484
St. Lawrence.....	242,920	881,418	450,157	381	40	.....	5,405	1,787,743	698,522	2,664,542	3,368,064	1,581,195	1,786,869
Chambly.....	4,169	10,504	242,508	.....	.....	.....	.....	141,796	246,677	152,300	398,977	257,181	141,796
St. Peters.....	5,471	4,158	.....	.....	.....	.....	.....	.....	5,471	4,158	9,629	9,629	.....
Murray.....	42,563	2,542	.....	.....	.....	.....	.....	1,575	42,563	4,117	46,680	45,085	1,565
Ottawa.....	11,795	160,809	.....	54,474	.....	.....	.....	.....	22,368	215,283	237,651	226,381	11,270
Rideau.....	58,488	40,165	.....	.....	.....	.....	.....	6,777	58,488	46,942	105,430	98,653	6,777
Trent.....	17,767	27,242	.....	.....	.....	.....	.....	.....	17,767	27,242	45,009	45,009	.....
St. Andrews.....	12,913	525	.....	.....	.....	.....	.....	.....	12,913	525	13,438	13,438	.....
Grand total.....	892,048	4,689,615	888,640	945,151	532,540	14,522,602	721,705	3,391,190	3,034,933	20,548,558	23,583,491	7,486,902	16,096,529



TABLE 2.—Statement showing the Number, Tonnage and Nationality of Vessels passed through the several Canals during the Season of Navigation in 1916.

Vessels.	Total Number.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	
CANADIAN VESSELS.												
Steam and Sail.												
Sault Ste. Marie .....	4,595	1,738,237	1,832,577	58,699	209,154	11,014	.....	206,763	33,493	2,014,713	2,075,224	4,089,937
Welland .....	3,092	419,529	421,698	441,570	200	7,904	.....	6,607	497,214	875,610	919,112	1,794,722
St. Lawrence .....	6,647	965,948	944,065	593,728	57,842	1,928	.....	314	565,247	1,561,918	1,567,154	3,129,072
Chambly .....	508	27,030	26,227	5,743	.....	.....	.....	.....	5,064	32,773	31,291	64,064
Ottawa .....	1,659	146,356	150,938	.....	3,321	.....	.....	1,397	.....	147,753	154,259	302,012
Rideau .....	1,672	55,677	57,709	1,665	.....	.....	.....	75	2,215	57,417	59,924	117,341
St. Peter's .....	133	5,623	3,578	.....	.....	.....	.....	.....	.....	5,623	3,578	9,201
Trent Valley .....	3,495	83,080	82,406	.....	.....	.....	.....	.....	.....	83,080	82,406	165,486
Murray .....	649	53,635	49,808	4,356	.....	.....	.....	.....	461	57,991	50,269	108,260
St. Andrews .....	552	29,593	29,341	.....	.....	.....	.....	.....	.....	29,593	29,341	59,934
Total Canadian .....	23,002	3,524,708	3,598,347	1,105,761	270,517	20,846	.....	215,156	1,103,694	4,866,471	4,972,558	9,839,029
UNITED STATES VESSELS.												
Sault Ste. Marie .....	2,094	36,428	8,631	45,191	280,363	2,854,439	5,174,432	276,388	27,315	3,212,446	5,490,741	8,703,187
Welland .....	847	3,104	945	230,102	1,698	89,750	52,460	893	339,945	323,849	395,048	718,897
St. Lawrence .....	1,678	25,200	16,404	425,616	46,211	14,101	2,148	2,708	483,979	467,625	548,742	1,016,367
Chambly .....	1,811	.....	295	93,721	.....	.....	.....	.....	92,282	93,721	92,577	186,298
Ottawa .....	328	8,754	.....	.....	16,707	.....	.....	8,590	.....	17,144	16,707	33,851
Rideau .....	12	607	607	.....	.....	.....	.....	.....	.....	607	607	1,214
St. Peter's .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Trent Valley .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Murray .....	30	.....	149	.....	.....	362	.....	168	257	619	406	1,025
St. Andrews .....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total United States .....	6,800	74,093	27,031	794,719	344,979	2,958,652	5,229,040	288,547	943,778	4,116,011	6,544,828	10,660,839
Grand total, Canadian and United States .....	29,802	3,598,801	3,625,378	1,900,480	615,496	2,979,498	5,229,040	503,703	2,047,472	8,982,482	11,517,386	20,499,868



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TABLE 3.—Statement showing the Number, Tonnage and Nationality of Vessels passed through the several Canals during the Season of Navigation in 1916.

Vessels.	Total Num-ber.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	
SAULT STE. MARIE CANAL.												
Canadian vessels, steam	3,908	1,675,419	1,766,433	57,669	206,971	11,014		204,076	32,339	1,948,172	2,605,742	3,553,915
" " sail	687	62,818	66,144	1,030	2,183			2,693	1,154	66,541	69,481	136,022
Total Canadian	4,595	1,738,237	1,832,577	58,699	209,154	11,014		206,769	33,493	2,014,713	2,675,224	4,089,937
United States vessels, steam	2,072	33,755	7,949	45,191	280,086	2,854,398	5,174,432	275,566	26,901	3,208,910	5,489,368	8,698,278
" " "	22	2,673	682		277	41		822	414	3,536	1,373	4,909
Total, United States.	2,094	36,428	8,631	45,191	280,363	2,854,439	5,174,432	276,388	27,315	3,212,446	5,490,741	8,703,187
Grand total, Sault Ste. Marie canal	6,689	1,774,665	1,841,208	103,890	489,517	2,865,453	5,174,432	483,151	60,808	5,227,159	7,565,965	12,793,124
WELLAND CANAL.												
Canadian vessels, steam	1,658	304,667	322,130	403,445		7,904		5,838	449,762	721,854	771,832	1,493,686
" " sail	434	114,862	99,568	38,125	200			769	47,512	153,750	147,280	301,030
Total Canadian	2,092	419,529	421,698	441,576	206	7,904		6,607	497,214	875,616	919,112	1,794,722
United States vessels, steam.	786	3,104	166	208,126	1,074	88,951	50,412	539	311,854	300,720	363,500	664,226
" " "	61		779	21,976	624	799	2,018	354	28,091	23,129	31,542	54,671
Total United States	847	3,104	945	230,102	1,698	89,750	52,460	893	339,945	323,849	395,048	718,897
Grand total, Welland Canal	2,939	422,633	422,643	671,672	1,898	97,654	52,460	7,500	837,159	1,199,450	1,314,160	2,513,619
ST. LAWRENCE CANALS.												
Canadian vessels, steam	4,258	627,294	651,945	518,747	50,544	1,470		314	470,847	1,147,825	1,173,336	2,321,161
" " sail	2,389	338,654	292,120	74,981	7,298	458			94,400	414,093	393,818	807,911
Total Canadian	6,647	965,948	944,065	593,728	57,842	1,928		314	565,247	1,561,918	1,567,154	3,129,072
United States vessels, steam.	1,194	9,019	7,278	400,339	37,286	13,702	282	174	452,408	423,264	497,254	920,518
" " "	484	16,151	9,126	25,277	8,925	399	1,866	2,534	31,571	44,361	51,488	95,849
Total United States	1,678	25,200	16,404	425,616	46,211	14,101	2,148	2,708	483,979	467,625	548,742	1,016,367
Grand total, St. Lawrence canal	8,325	991,148	960,469	1,019,344	104,053	16,029	2,148	3,022	1,049,226	2,029,543	2,115,896	4,145,439



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TABLE 3.—Statement showing the Number, Tonnage and Nationality of Vessels passed through the several Canals during the Season of Navigation in 1916—*Concluded.*

Vessels.	Total Number.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.
		Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	
CHAMBLEY CANAL.												
Canadian vessels, steam . . .	247	20,842	20,403							20,842	20,403	41,245
" " sail . . .	261	6,188	5,824						5,064	11,931	10,888	22,819
Total Canadian . . .	508	27,030	26,227						5,064	32,773	31,291	64,064
United States vessels, steam . . .	1								51		51	51
" " . . .	1,810		295						92,231	93,721	92,526	186,247
Total United States . . .	1,811		295						92,282	93,721	92,577	186,298
Grand total, Chambly canal. . .	2,319	27,030	26,522						97,346	126,494	123,868	250,362
OTTAWA CANALS.												
Canadian vessels, steam . . .	782	73,103	77,321		2,129			941		74,044	79,450	153,494
" " sail . . .	877	73,253	73,617		1,192			456		73,709	74,809	148,518
Total Canadian . . .	1,659	146,356	150,938		3,321			1,397		147,753	154,259	302,012
United States vessels, steam . . .	328	8,754			16,707			8,390		17,144	16,707	33,851
" " sail . . .	328	8,754			16,707			8,390		17,144	16,707	33,851
Total United States . . .	1,987	155,110	150,938		20,028			9,787		164,897	170,966	335,863
Grand total, Ottawa canals . . .												
RIDEAU CANAL.												
Canadian vessels, steam . . .	1,512	45,728	47,356					75	2,215	47,468	49,571	97,039
" " sail . . .	160	9,949	10,353							9,949	10,353	20,302
Total Canadian . . .	1,672	55,677	57,709					75	2,215	57,417	59,924	117,341
United States vessels, steam . . .	12	607	607							607	607	1,214
" " sail . . .	12	607	607							607	607	1,214
Total United States . . .	12	607	607							607	607	1,214
Grand total, Rideau canal. . .	1,684	56,284	58,316					75	2,215	58,024	60,531	118,555



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St. Peters Canal.													
Canadian vessels, steam.....	30	1,801	1,045	.....	.....	.....	.....	.....	.....	.....	1,801	1,045	2,846
" " sail.....	103	5,822	2,533	.....	.....	.....	.....	.....	.....	.....	3,822	2,533	6,355
Total Canadian.....	133	5,623	3,578	.....	.....	.....	.....	.....	.....	.....	5,623	3,578	9,201
United States vessels, steam.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" " sail.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total United States.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand total, St. Peters canal.....	133	5,623	3,578	.....	.....	.....	.....	.....	.....	.....	5,623	3,578	9,201
Trent Valley Canals.													
Canadian vessels, steam.....	3,011	69,627	69,505	.....	.....	.....	.....	.....	.....	.....	69,627	69,505	139,132
" " sail.....	484	13,453	12,901	.....	.....	.....	.....	.....	.....	.....	13,453	12,901	26,354
Total Canadian.....	3,495	83,080	82,406	.....	.....	.....	.....	.....	.....	.....	83,080	82,406	165,486
United States vessels, steam.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" " sail.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total United States.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand total, Trent Valley canals.....	3,495	83,080	82,406	.....	.....	.....	.....	.....	.....	.....	83,080	82,406	165,486
Murray Canal.													
Canadian vessels, steam.....	514	42,095	38,297	.....	.....	4,356	.....	.....	.....	.....	46,451	38,558	85,009
" " sail.....	135	11,540	11,511	.....	.....	.....	.....	.....	.....	.....	11,540	11,711	23,251
Total Canadian.....	649	53,635	49,808	.....	.....	4,356	.....	.....	.....	.....	57,991	50,269	108,240
United States vessels, steam.....	30	.....	149	.....	.....	89	.....	.....	.....	.....	619	406	1,025
" " sail.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total United States.....	30	.....	149	.....	.....	89	.....	.....	.....	.....	619	406	1,025
Grand total, Murray canal.....	679	53,635	49,957	.....	.....	4,445	.....	.....	.....	.....	58,610	50,675	109,285
St. Andrews Canal.													
Canadian vessels, steam.....	302	10,825	10,257	.....	.....	.....	.....	.....	.....	.....	10,825	10,257	21,082
" " sail.....	250	18,768	19,084	.....	.....	.....	.....	.....	.....	.....	18,768	19,684	37,852
Total Canadian.....	552	29,593	29,341	.....	.....	.....	.....	.....	.....	.....	29,593	29,941	58,934
United States vessels, steam.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" " sail.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total United States.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand total, St. Andrews canal.....	552	29,593	29,341	.....	.....	.....	.....	.....	.....	.....	29,593	29,941	58,934



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TABLE 4.—Comparative Statement of all the Canals for the years ending December 31, 1915 and 1916.

Articles.	1915.	1916.	Increase.	Decrease.
<i>Class No. 1.</i>	Tons.	Tons.	Tons.	Tons.
Canadian vessels, steam.....	8,052,740	8,308,609		
“ sail.....	1,345,467	1,530,420		
United States vessels, steam.....	6,980,212	10,284,098		
“ sail.....	404,889	376,741		
Total, Class No. 1.....	16,783,308	20,499,868		
<i>Class No. 2.</i>	No.	No.	No.	No.
Passengers.....	250,836	263,648	12,812	
<i>Class No. 3.</i>	Tons.	Tons.	Tons.	Tons.
Barley ...	161,590	266,439	104,849	
Buckwheat.....	12	12		
Corn.....	163,527	128,307		35,220
Oats.....	637,420	1,013,595	376,175	
Rye.....	11,878	21,950	10,072	
Flax.....	59,771	96,316	36,545	
Peas.....	1,001	161		840
Wheat.....	3,807,722	3,279,121		528,601
Flour.....	310,385	341,579	31,194	
Hay.....	9,874	15,285	5,411	
Other mill products..	8,988	8,366		622
Fruit and vegetables ..	8,878	4,505		4,373
Potatoes.....	1,479	3,170	1,691	
Live stock.....	1,205	988		217
Poultry, game and fish.....	625	768	143	
Dressed meats.....	79	185	106	
Other packing house products.....	1,677	861		816
Hides and leather.....	26	576	550	
Wool.....	183	139		44
All other animal products.....	7,494	7,825	331	
Total, Class No. 3.....	5,193,814	5,190,148	567,067	570,733
<i>Class No. 4.</i>	Tons.	Tons.	Tons.	Tons.
Agricultural products.....	21,570	34,238	12,668	
Cement, bricks, lime.....	34,996	29,331		5,665
Household goods and furniture.....	2,158	2,465	307	
Iron, pig and bloom.....	30,918	12,943		17,975
Iron and steel, all other.....	174,641	72,395		102,246
Petroleum and other oils.....	134,877	147,510	12,633	
Sugar.....	61,975	35,115		26,860
Salt.....	11,490	12,884	1,394	
Wines, liquors and beers.....	6,241	4,846		1,395
Merchandise not enumerated.....	617,245	482,539		134,706
Total, Class No. 4.....	1,096,111	834,266	27,002	288,847
<i>Class No. 5.</i>	Tons.	Tons.	Tons.	Tons.
Pulpwood.....	910,774	862,363		48,411
Sawed lumber.....	487,709	485,784		1,925
Squared timber.....	37,844	4,643		33,201
Shingles.....	9,229	3,326		5,903
Other woods.....	49,222	32,757		16,465
Total, Class No. 5.....	1,494,778	1,388,873		105,905



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TABLE 4.—Comparative Statement of all the Canals for the years ending December 31, 1915 and 1916—*Concluded*.

Articles.	1915.	1916.	Increase.	Decrease.
<i>Class No. 6.</i>	Tons.	Tons.	Tons.	Tons.
Hard coal	780,629	702,304		78,325
Soft coal.....	1,988,531	3,388,421	1,399,890	
Coke.....	324			324
Copper ore	20,331	3,972		16,359
Iron ore.....	4,133,360	11,558,835	7,425,475	
Other ore	29,518	7,048		22,470
Sand, etc.	161,407	509,624	48,217	
Total, Class No. 6.....	7,414,160	16,170,204	8,873,582	117,478
Grand total	15,198,803	23,583,491	9,467,651	1,082,963

Net increase 8,384,688 tons.



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TABLE 5.—Statement of Traffic on the undermentioned Canals during the Season of Navigation in 1916.

Articles.	Sault Ste. Marie.	Welland.	St. Lawrence.	Chambly.	St. Peters.	Murray.	Ottawa.	Rideau.	Trent Valley.	St. Andrews.
<i>Class No. 1.—Vessels.</i>										
Canadian vessels, steam.....	3,953,915	1,493,686	2,321,161	41,245	2,846	85,009	153,494	97,039	139,132	21,082
“ sail.....	136,022	301,036	807,911	22,819	6,355	23,251	148,518	20,302	26,354	37,852
United States vessels, steam.....	8,698,278	664,226	920,518	51	.....	1,025	.....	.....	.....	.....
“ sail.....	4,909	54,671	95,849	186,247	.....	.....	33,851	1,214	.....	.....
Total, Class No. 1.....	12,793,124	2,513,619	4,145,439	250,362	9,201	109,285	335,863	118,555	165,486	58,934
<i>Class No. 2.</i>										
Passengers.....	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
	31,734	.....	81,623	1,669	6	4,868	22,812	12,544	104,736	3,656
<i>Class No. 3.</i>										
Barley.....	148,072	58,921	59,436	6	4	.....	.....	.....	.....	.....
Buckwheat.....	.....	.....	.....	11	.....	.....	.....	.....	.....	.....
Corn.....	.....	78,420	49,746	94	10	.....	28	1	.....	.....
Oats.....	635,492	196,353	180,330	714	596	.....	97	9	.....	.....
Rye.....	1,232	10,886	9,785	.....	.....	.....	5	.....	4	.....
Flax.....	71,128	12,594	12,594	.....	.....	.....	.....	.....	42	.....
Peas.....	.....	.....	47	55	.....	.....	.....	37	.....	.....
Wheat.....	2,606,155	336,204	334,119	32	.....	.....	56	3	2,552	.....
Flour.....	335,327	200	4,153	988	406	.....	422	60	23	.....
Hay.....	7	.....	8,054	5,327	68	.....	1,677	152	.....	.....
Other mill products.....	5,790	.....	1,135	459	192	.....	489	214	87	.....
Fruit and vegetables.....	.....	.....	926	2,354	646	60	451	37	31	.....
Potatoes.....	86	.....	230	94	2,596	.....	136	1	27	.....
Live stock.....	.....	.....	386	89	.....	.....	297	1	215	.....
Poultry, game and fish.....	387	.....	179	11	155	.....	34	2	.....	.....
Dressed meats.....	.....	.....	64	11	83	.....	6	9	12	.....
Other packing house products.....	.....	.....	300	53	52	.....	189	251	16	.....
Hides and leather.....	.....	.....	180	41	.....	.....	159	196	.....	.....
Wool.....	135	.....	1	.....	.....	.....	1	2	.....	.....
All other animal products.....	.....	.....	3,349	5	40	.....	2,254	2,122	55	.....
Total, Class No. 3.....	3,803,811	693,578	665,014	10,344	4,848	60	6,323	3,106	3,064	.....















TABLE 7 (No. 1).—General Statement showing the Quantity of each Article Transported on the Sault Ste. Marie Canal during the Season of Navigation in 1916.

Articles.	From Canadian , to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.			
Agricultural implements	16,774								16,774		16,774	16,774	
All other animals		124,021				12,487				148,072	148,072	135,585	12,487
Barley							11,564						
Buckwheat					5,385				11,639		11,639	6,254	5,385
Cement, bricks, etc.	6,254				3,000			85,610	88,610		88,610		88,610
Coal, hard		3,100			347,400			594,512	941,937	3,100	945,037		945,037
" soft	25												
Coke													
Corn													
Dressed meats													
Flax		27,014				31,646				71,128	71,128	39,482	31,646
Flour		322,180				13,147				335,327	335,327	322,180	13,147
Fruits and vegetables													
Hay	7								7		7		
Hides and leather													
Household goods	21	1							21	1	22	22	
Iron, pig and bloom	3,752							400	4,152		4,152	4,152	
Iron and steel, all other	13,607	9,872			9,842		13,553		26,585	23,425	50,010	32,732	17,278
Live stock													
Merchandise	247,938	5,396			18,827	398		2,800	269,565	5,794	275,359	250,822	24,537
Oats		548,561					86,931			635,492	635,492	635,492	
Other mill products		5,790								5,790	5,790	5,790	
" packing house pro- ducts													
" woods	90	459					242		90	701	791	791	
Ore, all other													
" copper						3,972				3,972	3,972		3,972
" iron						11,277,163	116,624	93,066	17,920	11,486,853	11,504,773	123,022	11,381,751
Peas													
Petroleum	3,150								3,150		3,150	3,150	
Poultry, game and fish		387								387	387	387	
Potatoes	1	85							1	85	86	86	
Pulpwood	1,650	2,688					12,000		2,650	19,188	21,838	17,338	4,500
Rye										1,232	1,232		1,232
Sawed lumber		382					4,830	750	2,363	8,193	10,556	7,485	3,071
Shingles	553									3,048	3,048		3,048
Square timber										3,012	3,012	3,012	
Sugar	2,597	15					3,012		2,597	15	2,612	2,612	







TABLE 7 (No. 2).—General Statement showing the Quantity of each Article Transported on the Welland Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Agricultural implements	16,774								16,774		16,774	16,774	
Barley		57,932						989		58,921	58,921	58,921	
Cement, bricks, etc.	6,265								6,265		6,265	6,265	
Coal, hard					130,670		1,350		132,020		132,020		132,020
" soft.	750	28		1,200				1,056,144	750	1,057,372	1,058,122	28	1,058,094
Coke													78,420
Corn		2,380		30,838				45,202		78,420	78,420		
Flax		12,594								12,594	12,594	12,594	
Flour		9,200								200	200	200	
Household goods	20								20		20		
Iron, pig and bloom	4,055								4,055	5	4,060	4,600	
Iron and steel, all other.	6,767								6,767	55	6,822	6,767	55
Merchandise	53,320	500	390						53,626	1,050	54,670	54,120	550
Oats		190,917		1,559				3,877		196,353	196,353	192,908	3,445
Ore, all other					6,998				6,998		6,998		6,998
Ore, iron.					1,003			37,620	1,003	37,620	38,623		38,623
Petroleum.	370								370	84,946	85,316	85,316	
Pulpwood	54,562		192,865						247,427		247,427	247,427	
Rye										10,886	10,886		10,886
Sawed lumber				13,629				1,450		18,136	18,136	3,057	15,079
Sugar	10,113								10,113		10,113	10,113	
Salt													
Sand and stone	3,325	29,305			9,375			123,276	12,700	152,581	165,281	33,230	132,051
Wheat		296,475		7,530				32,199		336,204	336,204	321,941	14,263
Wines, liquors and beers	739								739		739	739	
Total freight.	157,060	675,282	193,165	55,361	148,046		1,350	1,311,643	499,621	2,045,343	2,544,964	1,054,480	1,490,484



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TABLE 7 (No. 3).—General Statement showing the Quantity of each Through Article Transported on the Welland Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Agricultural implements	16,774								16,774		16,774	16,774	
Barley	6,265	57,932						989	58,921		58,921	58,921	
Cement, bricks, etc.									6,265		6,265	6,265	
Coal, hard			130,670				1,350		132,020		132,020		132,020
" soft								1,039,402		1,040,602	1,040,602		1,040,602
Corn		2,380			1,200								
Flax		12,594			30,838			45,202					
Flour		200											
Household goods	20								20		20		
Iron, pig and bloom	4,055								4,055		4,055	4,055	
Iron and steel, all other	6,767				55				55		6,822	6,767	55
Merchandise	53,320	400			550				950		54,270	54,020	550
Oats		190,947			1,559			3,877	196,353		196,353	192,908	3,445
Ore, all other.			6,998						6,998		6,998		6,998
" iron			1,003						1,003		38,623		38,623
Petroleum	370								370		38,623	80,463	
Pulpwood	2,000								194,895		194,895	194,895	
Rye									10,886		10,886		10,886
Sawed lumber	10,113				13,629			1,450	18,136		18,136	3,057	15,079
Sugar									10,113		10,113	10,113	
Salt	950								10,325		10,325	1,550	8,775
Sand and stone		296,475	9,375						336,204		336,204	321,941	14,263
Wheat	739				7,530				739		739	739	
Wines, liquors and beers													
Total freight	101,373	640,991	148,046	55,361	1,350	1,171,625	443,934	1,871,034	2,314,968		2,314,968	965,252	1,349,716



TABLE 7 (No. 4).—General Statement showing the Quantity of each Way Article Transported on the Welland Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons. Canadian Ports.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Coal, soft .....	750	28							750	16,770	17,520	28	17,492
Iron, pig and bloom .....		5								5	5	5	
Merchandise .....		100								100	100	100	
Petroleum .....		4,853								4,853	4,853	4,853	
Pulpwood .....	52,562								52,562	4,853	52,562	52,562	
Salt .....	2,375	29,305							2,375	152,581	154,956	31,680	123,276
Sand and stone .....													
Total freight .....	55,687	34,291							55,687	174,309	229,996	89,228	140,768



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TABLE 7 (No. 5).—General Statement showing the Quantity of each Article Transported on the St. Lawrence Canals during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Agricultural implements	124	65			1				125	65	190	186	1
All other animals	804	2,545							804	2,545	3,349	3,349	
Barley	192	58,255						989	192	59,244	59,436	59,436	
Cement, bricks, etc.	9,193	236							9,193	236	9,429	8,608	821
Coal, hard	2,331							370,227	2,331	370,227	372,558	2,331	370,227
" soft	40,929	47					615	1,333,791	41,544	1,333,838	1,375,382	37,772	1,337,610
Corn	327	7,215						42,204	327	49,419	49,746	339	49,407
Dressed meats	10	54							10	54	64	64	
Flax		12,594								12,594	12,594	12,594	
Flour	1,023	3,001		129					1,023	3,130	4,153	4,153	
Fruits and vegetables	219	701	3		3				225	701	926	921	5
Hay	6,009	1,793		252					6,009	2,045	8,054	8,054	
Hides and leather	121	54	5						126	54	180	180	
Household goods	643	1,295			2				645	1,295	1,940	1,878	62
Iron, pig and bloom	1,526	2,517							1,526	2,517	4,043	4,043	39
Iron and steel, all other	4,296	40,169							4,296	10,619	14,465	14,465	
Live stock	84	301			1				85	301	386	385	1
Merchandise	46,551	46,339	3		26		4,180		50,760	47,172	97,932	92,293	5,639
Oats	435	178,009						1,886	435	179,895	180,330	178,444	1,886
Other mill products	234	901							234	901	1,135	1,135	
Other packing house products	201	99							201	99	300	300	
Other woods	2,493	566							2,493	566	3,059	3,059	
Ore, iron								160		160	160		160
Peas	31	16							31	16	47	47	
Petroleum	2,947	54,795							2,947	54,795	57,742	57,742	
Poultry, game and fish	145	34							145	34	179		179
Potatoes	87	143							87	143	230	230	
Pulpwood	40,785	2,175	450,146						490,931	2,175	493,106	493,106	
Rye	27,986	125,699						9,780	27,986	9,780	9,785	2,273	7,512
Sawn lumber	125	615							125	615	740	690	50
Square timber	21,401	194							21,401	194	21,595	21,595	
Sugar	1,211	461							1,211	461	1,672	1,672	
Salt	24,526	67,694					610		25,136	67,694	92,830	88,341	4,489
Sand and stone	3,845	302,394			7			27,873	3,852	330,267	334,119	325,150	8,969
Wheat	2,080	442							2,080	442	2,522	2,522	
Wines, liquors and beers													
Wool	1								1		1	1	
Total freight	242,920	881,418	450,157	381	40		5,405	1,787,743	698,522	2,009,542	3,368,064	1,581,195	1,786,869



TABLE 7 (No. 6).—General Statement showing the Quantity of each Through-Article Transported on the St. Lawrence Canals during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total. Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
All other animals.	57	89							57	89	146	146	
Barley.		58,243						989		59,232	59,232	59,232	
Cement, bricks, etc.	6,895	1							6,895	1	6,896	6,896	
Coal, hard.	2,000							361,607	2,000	361,607	363,607	2,000	361,607
" soft.	6,447							1,318,250	6,447	1,318,250	1,324,697	5,600	1,319,097
Corn.								31,114		31,114	31,114		31,114
Flax.		12,594								12,594	12,594	12,594	
Flour.		204								204	204	204	
Fruits and vegetables.		342								342	342	342	
Hides and leather.		20								20	20	20	
Household goods.	389	988							389	988	1,377	1,377	
Iron, pig and bloom.	1,000	1,460							1,000	1,460	2,460	2,460	
Iron, steel and other.	2,750	7,500							2,750	7,500	10,250	10,250	
Live stock.		3								3	3	3	
Merchandise.	37,572	37,935							37,572	37,935	75,507	75,507	
Oats.		177,151						1,886		179,037	179,037	177,151	1,886
Petroleum.	751	54,016							751	54,016	54,767	54,767	
Pulpwood.	40,785								489,581		489,581	489,581	
Rye.								9,780		9,780	9,780	2,268	7,512
Sugar.	20,375								20,375		20,375	20,375	
Salt.	28								28		28	28	
Sand and stone.													
Wheat.		302,394						27,873		330,267	330,267	321,298	8,969
Wines, liquors and beers.	1,125	376							1,125	376	1,501	1,501	
Total freight.....	120,174	653,316						1,751,499	568,970	2,404,815	2,973,785	1,243,600	1,730,185



TABLE 7 (No. 7).—General Statement showing the Quantity of each Way Article Transported on the St. Lawrence Canals during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Canadian Ports.		United States Ports.		United States Ports.		Canadian Ports.		Up.	Down.		Canadian.	U. S.
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.					
Agricultural implements	124	65			1				125	65	190	189	1
All other animals	747	2,456							747	2,456	3,203	3,203	
Barley	192	12							192	12	204	204	
Cement, bricks, etc.	2,298	235							2,298	235	2,533	1,712	821
Coal, hard	331								331		8,951	331	8,620
soft	34,482	47							35,097	8,620	50,685	32,172	18,513
Corn	327	7,215							327	15,588	18,632	329	18,293
Dressed meats	10	54							10	54	64	64	
Flour	1,023	2,797							1,023	2,926	3,949	3,949	
Fruits and vegetables.	219	359			3				225	359	584	579	5
Hay	6,009	1,793				252			6,009	2,045	8,054	8,054	
Hides and leather	121	34							126	34	160	160	
Household goods	254	307			2				256	307	563	501	62
Iron, pig and bloom	526	1,057							526	1,057	1,583	1,583	30
Iron and steel, all other	1,546	2,669							1,546	2,669	4,215	4,215	
Live stock	84	298			1				85	298	383	382	1
Merchandise	8,979	8,404			26				13,188	9,237	22,425	16,786	5,639
Oats	435	858							435	858	1,293	1,293	
Other mill products	234	901							234	901	1,135	1,135	
" packing house pro-													
ducts	201	99							201	99	300	300	
" woods	2,493	566							2,493	566	3,059	3,059	
Ore, iron											160		160
Peas	31	16							31	16	47	47	
Petroleum	2,196	779							2,196	779	2,975	2,975	
Poultry, game and fish	145	34							145	34	179	179	
Potatoes	87	143							87	143	230	230	
Pulpwood		2,175							1,350	2,175	3,525	3,525	
Rye	5								5		5	5	
Sawed lumber	27,986	125,699							27,986	125,699	153,685	153,685	
Square timber	125	615							125	615	740	690	50
Sugar	1,026	194							1,026	194	1,220	1,220	
Salt	1,183	461							1,183	461	1,644	1,644	
Sisal and stone	24,526	67,694							25,136	67,694	92,820	88,341	4,479
Wheat	3,845				7				3,852		3,852	3,845	7
Wine, Hops and beer	955	66							955	66	1,021	1,021	
Wool	1								1		1	1	
Total freight	122,746	228,102			40				129,552	264,727	394,279	337,588	56,691



TABLE 7 (N. S).—General Statement showing the Quantity of each Article Transported on the Chambly Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Agricultural implements	133	1							133	1	134	134	
All other animals	4	1							4	1	5	5	
Barley	6								6		6	6	
Buckwheat	6	5							6	5	11	11	
Cement, bricks, etc.	252								252		252	252	
Coal, hard	45							100, 120	45	100, 120	100, 165	45	100, 120
Corn	84	10							84	10	94	94	
Dressed meats	11								11		11	11	
Flour	951	37							951	37	988	988	
Fruits and vegetables	282	2, 072							282	2, 072	2, 354	2, 354	
Hay	5	5, 322							5	5, 322	5, 327	5, 327	
Hides and leather	4	37							4	37	41	41	
Household goods	42	27							42	27	69	69	
Iron, pig and bloom	7								7		7	7	
Iron and steel, all other	315	16							315	16	331	331	
Live stock	5	84							5	84	89	89	
Merchandise	485	887						16, 221	1, 195	17, 108	18, 303	2, 082	16, 221
Oats	11	703							11	703	714	714	
Other mill products	342	117							342	117	459	459	
" packing house products													
" woods	49	4							49	4	53	53	
Ore, iron	77	975							502	975	1, 477	1, 477	
Pears								15, 277		15, 277	15, 277		15, 277
Petroleum	22	33							22	33	55	55	
Poultry, game and fish	80	2							80	2	82	82	
Potatoes		11								11	11	11	
Pulpwood	84	10							84	10	94	94	
Sawed lumber									86, 215		86, 215	86, 215	
Shingles	20	88							154, 778	88	154, 866	154, 866	
Square timber	73								73		73	73	
Sugar	149	23								23	23	23	
Salt	280	3							149	3	152	152	
Sand and stone	280	27							280	27	307	307	
Wheat	23	9						10, 178	680	10, 178	10, 858	680	10, 178
Wines, liquors and beers	42								23	9	32	32	
									42		42	42	
Total freight	4, 169	10, 504						141, 796	246, 677	152, 300	398, 977	257, 181	141, 796



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TABLE 7 (No. 9).—General Statement showing the Quantity of each Article Transported on the St. Peter's Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
All other animals	40								40		40	40	
Barley	4								4		4	4	
Cement, bricks, etc.	5								5		5	5	
Coal, hard	4	1							5		5	5	
" soft	3	3,779							3	3,779	3,782	3,782	
Corn	10								10		10	10	
Dressed meats	83								83		83	83	
Flour	400	6							400	6	406	406	
Fruits and vegetables	640	6							640	6	646	646	
Hay	67	1							67	1	68	68	
Household goods	6	5							6	5	11	11	
Iron and steel, all other	16	3							16	3	19	19	
Merchandise	373	212							373	212	585	585	
Oats	594	2							594	2	596	596	
Other mill products	172	20							172	20	192	192	
" packing house products	46	6							46	6	52	52	
" woods	6	4							6	4	10	10	
Petroleum	211	7							211	7	218	218	
Poultry, game and fish	51	104							51	104	155	155	
Potatoes	2,593	3							2,593	3	2,596	2,596	
Sawed lumber	20								20		20	20	
Sugar	22								22		22	22	
Salt	104								104		104	104	
Total freight	5,471	4,158							5,471	4,158	9,629	9,629	



TABLE 7 (No. 10).—General Statement showing the Quantity of each Article Transported on the Murray Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.		Down.		Up.		Down.		Up.	Down.		Canadian.	U. S.
Coal, hard	20							1,575	20	1,575	1,595		1,595
Fruits and vegetables.	60								60		60	60	
Household goods										5	5	5	
Merchandise	7,149		2,481						7,149	2,481	9,630	9,630	
Petroleum			18							18	18	18	
Sawed lumber	2								2		2	2	
Sugar	15								15		15	15	
Sand and Stone.	35,285								35,285		35,285	35,285	
Wines, liquors and beers	32		38						32	38	70	70	
Total freight.	42,563		2,542					1,575	42,563	4,117	46,680	45,085	1,595



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TABLE 7 (No. 11).—General Statement showing the Quantity of each Article Transported on the Ottawa Canals during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian	U. S.
Agricultural implements	108	66							108	66	174	174	
All other animals	21	2,233							21	2,233	2,254	2,254	
Cement, bricks, etc	688	50							688	50	738	738	
Coal, hard	6								6		594	594	594
" soft	1,370								5,742		5,742	870	4,872
Corn	28								28		28	28	
Dressed meats	5	1							5	1	6	6	
Flour	409	13							409	13	422	422	
Fruits and vegetables.	127	324							127	324	451	451	
Hay		1,677								1,677	1,677	1,677	
Hides and leather	121	38							121	38	159	159	
Household goods	124	65							124	65	189	189	
Iron, pig and bloom.	324	9							324	9	333	333	
Iron and steel, all other.	193	7							193	7	200	200	
Live stock	52	245							52	245	297	297	
Merchandise	5,176	5,825							10,788	5,825	16,613	11,001	5,612
Oats	65	32							65	32	97	97	
Other mill products	152	337							152	337	489	489	
" packing house													
" products													
" woods.	135	54							135	54	189	189	
Peas	130	951		2					130	953	1,083	1,083	
Petroleum	5	17							5	17	22	22	
Poultry, game and fish.	343	170							343	170	513	513	
Potatoes	18	34							18	34	52	52	
Rye	5	118							5	118	123	123	
Sawed lumber	422	92,928		54,100					422	137,028	137,450	137,450	
Shingles		13		2						15	15	15	
Square timber		250		370						620	620	620	
Sugar	329	61							329	61	390	390	
Salt	516	3							516	3	519	519	
Sand and stone	425	65,231							425	65,231	65,656	65,656	192
Wheat	56								56		56	56	
Wines, liquors and beers.	422	57							422	57	479	479	
Wool	1								1		1	1	
Total freight.	11,796	160,809		54,474			10,572		22,368	215,284	237,651	220,481	11,170



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TABLE 7 (No. 12).—General Statement showing the Quantity of each Article Transported on the Rideau Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Agricultural implements	89	83							89	83	172		
All other animals	203	1,919							203	1,919	2,122		
Buckwheat		1								1	1		
Cement, bricks, etc.	154	151							154	151	305		
Coal, hard	17	38							77	6,659	6,676		6,621
" soft	20	63							20	219	239		156
Corn	2	7							2	7	9		
Dressed meats	8	1							8	1	9		
Flour	7	53							7	53	60		
Fruits and vegetables	20	17							20	17	37		
Hay	133	19							133	19	152		
Hides and leather	169	27							169	27	196		
Household goods	19	12							19	12	31		
Iron, pig and bloom	330	6							330	6	336		
Iron and steel, all other	534	10							534	10	544		
Live stock	1								1		1		
Merchandise	4,016	3,447							4,016	3,447	7,463		
Oats	5	4							5	4	9		
Other mill products	95	119							95	119	214		
" packing house products	207	44							207	44	251		
" woods	201	154							201	154	355		
Ore, all other		50								50	50		
Peas	32	5							32	5	37		
Petroleum	255	162							255	162	417		
Poultry, game and fish		2								2	2		
Potatoes	1								1		1		
Sawed lumber	2,979	6,525							2,979	6,525	9,504		
Shingles	5	1							5	1	6		
Square timber	47								47		47		
Sugar	127	65							127	65	192		
Salt	633	102							633	102	735		
Sand and stone	47,625	27,068							47,625	27,068	74,693		
Wheat	3								3		3		
Wines, liquors and beers	549	10							549	10	559		
Wool	2								2		2		
Total freight	58,488	40,165							58,488	46,942	105,430	98,653	6,777



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TABLE 7 (No. 13).—General Statement showing the Quantity of each Article Transported on the Trent Valley Canals during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total Tons.	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Agricultural implements	15	5							15	5	20	20	
All other animals	7	48							7	48	55	55	
Cement, bricks, etc.	126	570							126	570	696	696	
Coal, hard	75	6							75	6	81	81	
" soft	82	35							82	35	117	117	
Dressed meats	12								12		12	12	
Flour	23								23		23	23	
Fruits and vegetables	25	6							25	6	31	31	
Household goods	129	43							129	43	172	172	
Iron, pig and bloom	9	3							9	3	12	12	
Iron and steel, all other	4								4		4	4	
Live stock	177	38							177	38	215	215	
Merchandise	944	834							944	834	1,778	1,778	
Cats	4								4		4	4	
" other mill products.	81	6							81	6	87	87	
" packing house products.													
" woods	13	3							13	3	16	16	
Ore, iron	22,174	10,949							12,174	10,949	23,123	23,123	
Petroleum	38	16							38	16	54	54	
Potatoes	13	14							13	14	27	27	
Pulpwood	30	13,747							30	13,747	13,777	13,777	
Rye	42								42		42	42	
Sawed lumber	847	709							847	709	1,556	1,556	
Shingles	78	106							78	106	184	184	
Square timber	102	99							102	99	201	201	
Sugar	21	3							21	3	24	24	
Salt	4	2							4	2	6	6	
Sand and stone	128								128		128	128	
Wheat	2,552								1,552		2,552	2,552	
Wines, liquors and beer	10								10		10	10	
Total freight	17,767	27,242							17,767	27,242	45,009	45,009	



TABLE 7 (No. 14).—General Statement showing the Quantity of each Article Transported on the St. Andrew's Canal during the Season of Navigation in 1916.

Articles.	From Canadian to Canadian Ports.		From Canadian to United States Ports.		From United States to United States Ports.		From United States to Canadian Ports.		Tons.		Total	Origin of Cargo.	
	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.	Up.	Down.		Canadian.	U. S.
Cement, bricks, etc.											2	2	
Household goods											6	6	
Merchandise	20	186							20	186	206	206	
Other woods	2,537	322							2,537	322	2,859	2,859	
Ore, all other	10,356								10,356		10,356	10,356	
Sawed lumber										9	9	9	
Total freight	12,913	525							12,913	525	13,438	13,438	



TABLE 8.



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TABLE 8.—STATEMENT showing the Classified Tonnage of all kinds of Vessels

SAULT STE.

CANADIAN.							
Class.	Steam Vessels.	No.	Tonnage.	Class.	Sailing Vessels.	No.	Tonnage.
	Tons.				Tons.		
1	5,000 to 5,704.....	1	5,704	1	5,000 to .....		
2	4,000 " 5,000.....	3	13,650	2	4,000 " 5,000.....		
3	3,000 " 4,000.....	5	18,300	3	3,000 " 4,000.....		
4	2,000 " 3,000.....	13	30,250	4	2,000 " 3,000.....	1	2,132
5	1,000 " 2,000.....	44	58,100	5	1,000 " 2,000.....		
6	Under 1,000.....	83	12,340	6	Under 1,000.....	40	10,475
	Total.....	149	138,344		Total.....	41	12,607

WELLAND

1	250 to 2,347.....	92	94,247	1	250 to 1,239.....	23	16,025
2	200 " 249.....	5	1,000	2	200 " 249.....	6	1,200
3	150 " 199.....	1	175	3	150 " 199.....	6	900
4	100 " 149.....	5	625	4	100 " 149.....	9	900
5	50 " 99.....	9	650	5	50 " 99.....	5	170
6	Under 50.....	30	945	6	Under 50.....	2	40
	Total.....	142	97,642		Total.....	49	19,235

ST. LAWRENCE

1	250 to 2,347.....	98	89,286	1	250 to 1,114.....	68	33,433
2	200 " 249.....	6	1,280	2	200 " 249.....	11	3,560
3	150 " 199.....	16	2,660	3	150 " 199.....	26	6,730
4	100 " 149.....	14	1,730	4	100 " 149.....	46	5,560
5	50 " 99.....	14	1,015	5	50 " 99.....	18	1,430
6	Under 50.....	28	805	6	Under 50.....	10	275
	Total.....	176	96,776		Total.....	179	50,988

RIDEAU, OTTAWA AND

1	250 to 371.....	2	690	1	250 to 250.....	1	250
2	200 " 249.....			2	200 " 249.....	3	600
3	150 " 199.....	3	480	3	150 " 199.....	24	4,080
4	100 " 149.....	5	580	4	100 " 149.....	42	5,040
5	50 " 99.....	4	245	5	50 " 99.....	17	1,225
6	Under 50.....	40	1,005	6	Under 50.....	18	455
	Total.....	54	3,000		Total.....	105	11,650



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passed through the following Canals, during the Season of Navigation in 1916.

MARIE CANAL.

UNITED STATES.							
Class.	Steam Vessels.	No.	Tonnage.	Class.	Sailing Vessels.	No.	Tonnage.
	Tons.				Tons.		
1	5,000 to 5,498	67	365,748	1	5,000 to .....		
2	4,000 " 5,000	74	313,350	2	4,000 " 5,000		
3	3,000 " 4,000	97	338,900	3	3,000 " 4,000		
4	2,000 " 3,000	32	76,056	4	2,000 " 3,000		
5	1,000 " 2,000	19	30,450	5	1,000 " 2,000	1	1,950
6	Under 1,000	19	4,355	6	Under 1,000	13	1,815
	Total	308	1,158,853		Total	14	3,765

CANAL.

1	250 to 3,792	87	93,367	1	250 to 2,070	13	9,645
2	200 " 249	4	850	2	200 " 249	3	625
3	150 " 199	3	500	3	150 " 199	4	675
4	100 " 100	8	850	4	100 " 149	3	350
5	50 " 99	16	1,050	5	50 " 99	5	180
6	Under 50	19	445	6	Under 50	2	15
	Total	137	97,062		Total	30	11,690

CANALS.

1	250 to 3,200	63	69,278	1	250 to 800	13	5,190
2	200 " 249	4	870	2	200 " 249	1	220
3	150 " 199	3	500	3	150 " 199	3	490
4	100 " 149	4	450	4	100 " 149	30	3,430
5	50 " 99	10	765	5	50 " 99	79	6,970
6	Under 50	6	125	6	Under 50	4	150
	Total	90	71,988		Total	130	16,430

CHAMBLY CANALS.

1	250 to			1	250 to		
2	200 " 249			2	200 " 249		
3	150 " 199			3	150 " 199	6	1,000
4	100 " 149			4	100 " 149	99	11,000
5	50 " 99	1	50	5	50 " 99	271	25,570
6	Under 50	1	25	6	Under 50	2	90
	Total	2	75		Total	378	37,660







APPENDIX

DOMINION CANALS

The canal systems of the Dominion, under government control in connection with lakes and navigable rivers, are as follows:—

*First—The through route between Montreal and the head of Lake Superior (14 feet minimum depth of water.)*

	Miles.
1. Lachine canal.....	8½
Lake St. Louis and river St. Lawrence.....	16
2. Soulanges canal.....	14
Lake St. Francis and river St. Lawrence.....	31
3. Cornwall canal.....	11¼
River St. Lawrence.....	5
4. Farran's Point canal.....	1½
River St. Lawrence.....	9½
5. Rapide Plat canal.....	3¾
River St. Lawrence.....	4
6. Galops canal.....	7½
River St. Lawrence and lake Ontario.....	228
7. Welland canal.....	26¾
Lake Erie, Detroit river, lake St. Clair, lake Huron, etc.....	574
8. Sault Ste. Marie canal.....	1¼
Lake Superior to Port Arthur.....	272
Total.....	1,214
To Duluth.....	1,336
Chicago.....	1,240

*Second.—Ot'awa to lake Champlain.*

1. Grenville.   2. Carillon.   3. St. Anne's.   4. Chambly.   5. St. Ours canals.

*Third.—Ottawa to Kingston and Perth.*

1. Rideau canal.

*Fourth.—Lake Ontario at Trenton to lake Huron at mouth of river Severn.*

1. Trent canal (not completed).

*Fifth.—Ocean to Bras d'Or lakes.*

1. St. Peter's canal.



## RIVER ST. LAWRENCE AND LAKES.

The river St. Lawrence with the system of canals established on its course above Montreal, and the lakes Ontario, Erie, St. Clair, Huron and Superior, with connecting canals, afford a course of water communication extending from the Straits of Belle Isle to Port Arthur, at the head of lake Superior, a distance of 2,217 statute miles. The distance to Duluth is 2,339 statute miles. The distance to Chicago, 2,243 miles.

From the straits of Belle Isle, at the mouth of the St. Lawrence, to Montreal, the distance is 1,003 miles. From Quebec to Montreal, the distance is 160 miles. Owing to the shallowness of the waters on a portion of the river between these two places, particularly through lake St. Peter, vessels drawing more than from ten to twelve feet were formerly barred from passage for the greater part of the season of navigation. In 1826, the question of deepening the channel was first definitely mooted, but it was not until 1844 that any dredging operations were begun. In that year, the deepening of a new straight channel was commenced, but the scheme was abandoned in 1847. In 1851 the deepening of the present channel was begun. At that time the depth of the channel at low water was 10 feet 6 inches. By the year 1869, this depth had been increased to 20 feet, by 1882 to 25 feet, and by the close of 1888 the depth of 27½ feet, at low water, was attained for a distance of 108 miles from Montreal to a point within tidal influence. This work is now being continued by the government of Canada, which in 1888, under the provisions of the Act 51 Vic., ch. 5, of that year assumed the indebtedness. The channel has a minimum width of 300 feet, extending to 550 feet at points of curvature. The channel is lighted and buoyed.

Navigation, which is closed by ice during the winter months, opens about the end of April.

Montreal has by this work been placed at the head of ocean navigation, and here the canal systems of the river St. Lawrence begin, overcoming the various rapids by which the river channel upwards is obstructed, and giving access through the St. Lawrence canals, the Welland canal, the great lakes and the Sault Ste. Marie canal, to the head of lake Superior.

The difference in level between the point on the St. Lawrence, near Three Rivers, where tidal influence ceases, and lake Superior is about 600 feet.

The Dominion canals, constructed between Montreal and lake Superior are the Lachine, Soulanges, Cornwall, Farran's Point, Rapide Plat, Galops, Murray, Welland and Sault Ste. Marie. Their aggregate length is 74 miles; total lockage (or height directly overcome by locks), 553½ feet. The number of locks through which a vessel would pass in its passage from Montreal, at the head of ocean navigation, to the head of lake Superior is 48. The Soulanges canal takes the place of the Beauharnois canal; the latter may be abandoned for navigation purposes.

Communication between lakes Huron and Superior is obtained by means of the Canadian Sault Ste. Marie canal, and also by the St. Mary's Falls canal, situated on the United States side of the river St. Mary. Both these canals are free of toll.

It is important to note that the enlargement of the canals on the main route between Montreal and lake Erie comprises locks of the following minimum dimensions: Length, 270 feet; width, 45 feet; depth of water on sills, 14 feet. The length of the vessels to be accommodated is limited to 255 feet. At Farran's in the canal of that name, the lock is 800 feet long. A similar lock is built at Iroquois on the Galops Canal, the object being to pass a full tow at one lockage.



SESSIONAL PAPER No. 20a

## LACHINE CANAL.

First construction commenced.....	1821
"            completed.....	1825
First enlargement commenced.....	1843
"            completed.....	1848
Second enlargement commenced.....	1873
"            completed.....	1901
Length of canal.....	8½ statute miles.
Number of locks.....	5
Dimensions of locks.....	270 feet by 45 feet.
Total rise of lockage.....	45 "
Depth of water on sills two locks.....	18 "
"            "            three locks.....	14 "
Average width of new canal.....	150 "

The old lift locks, 200 feet by 45 feet, are still available, with 9 feet of water on mitre sills.

The canal consists of one channel, with two distinct systems of locks, the old and the enlarged. There are two lock entrances at each end.

The canal extends from the city of Montreal to the town of Lachine, overcoming the St. Louis rapids, the first of the series of rapids which bars the ascent to the river St. Lawrence. They are 1,006 miles distant from the Straits of Belle Isle.

## SOULANGES CANAL.

Construction commenced.....	1892
Open for traffic.....	1899
Length of canal.....	14 statute miles.
Number of locks, lift.....	4
"            guard.....	1
Dimensions of locks.....	280 feet by 45 feet.
Total rise of lockage.....	84 "
Depth of water on sills.....	15 "
Breadth of canal at bottom.....	100 "
"            "            water surface.....	164 "
Number of arc lights.....	219 of 2,000 c.p. each.

The canal extends from Cascade point to Coteau landing, overcoming the Cascade rapids, Cedar rapid and Coteau rapids.

From the head of the Lachine to the foot of the Soulanges, the distance is sixteen miles.

## CORNWALL CANAL.

First commenced, 9 feet.....	1844
First opened.....	1847
Enlargement commenced.....	1897
"            completed.....	1900
Length of canal.....	11 statute miles.
Number of locks.....	6
Dimensions of locks.....	270 feet by 75 feet.
Total rise of lockage.....	48 "
Depth of water on sills.....	14 "
Breadth of canal at bottom.....	90 "
"            "            water surface.....	154 "



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The old lift locks, 200 feet by 55 feet, are also available, with nine feet of water on mitre sills.

From the head of the Soulanges to the foot of the Cornwall canal there is a stretch through lake St. Francis of 31 miles, which is being made navigable for vessels drawing fourteen feet.

The Cornwall canal extends past the Long Sault rapids from the town of Cornwall to Dickinson's landing.

### WILLIAMSBURG CANALS.

The Farran's Point, Rapide Plat, and Galops canals are collectively known as the Williamsburg canals.

#### FARRAN'S POINT CANAL.

First commenced, 9 feet.....	1844
Opened.....	1847
Enlargement commenced.....	1897
"    completed.....	1900
Length of canal.....	1½ miles.
Number of locks.....	1
New lock.....	800 feet by 45 feet.
Old lock.....	200 "    "
Total rise of lockage.....	3½ feet.
Depth of water on sills of new lock.....	14 "
"    "    old lock.....	9 "
Breadth of canal at bottom.....	90 "
"    "    water surface.....	154 "

From the head of the Cornwall canal to the foot of Farran's Point canal, the distance on the river St. Lawrence is five miles. The latter canal enables vessels ascending the river to avoid Farran's Point rapid, passing the full tow at one lockage. Descending vessels run the rapids with ease and safety.

#### RAPIDE PLAT CANAL.

First commenced, 9 feet.....	1844
First opened.....	1847
Enlargement commenced.....	1884
"    completed.....	1897
Length of canal.....	3⅔ miles.
Number of locks.....	2
Dimensions of locks.....	270 feet by 45 feet.
Total rise in lockage.....	11½ "
Depth of water on sills.....	14 "
Breadth of canal at bottom.....	80 "
"    "    surface of water.....	152 "

The old lift lock, 200 by 45 feet, is also available, with nine feet of water on mitre sills.

From the head of Farran's Point canal to the foot of Rapide Plat canal there is a navigable stretch of 9½ miles. This canal was formed to enable vessels ascending the river to pass the rapids at that place. Descending vessels run the rapids safely.



SESSIONAL PAPER No. 20a

## GALOPS CANAL.

First commenced, 9 feet.....	1844
Opened.....	1846
Enlargement commenced.....	1888
“ completed.....	1903
Length of canal.....	7 $\frac{3}{4}$ miles.
Number of locks.....	3
Dimension of locks (one of which is a guard lock).....	{ 800 by 50. 270 by 45. 303 by 45.
Total rise of lockage.....	15 $\frac{1}{2}$ feet.
Depth of water on sills.....	14 “
Breadth of canal at bottom.....	80 “
“ surface of water.....	144 “

From the head of Rapide Plat canal to Iroquois, at the foot of the Galops canal, the St. Lawrence is navigable 4 $\frac{1}{2}$  miles. The canal enables vessels to overcome the rapids at Pointe aux Iroquois, Point Cardinal and the Galops.

## MURRAY CANAL.

Construction begun.....	1882
Completed.....	1890
Length between eastern and western pier heads.....	5 $\frac{1}{2}$ miles.
Breadth at bottom.....	80 feet.
“ water surface.....	124 “
Depth below lowest known lake level....	11 “
No locks.	

This canal extends through the Isthmus of Murray, giving connection westward between the head waters of the Bay of Quinte and Lake Ontario, and thus enabling vessels to avoid the open lake navigation.

## WELLAND CANAL.

Main line from Port Dalhousie, lake Ontario, to Port Colborne, lake Erie.

	Old Line.	Enlarged or New Line.
Length of canal.....	27 $\frac{1}{2}$ miles.	26 $\frac{3}{4}$ miles.
Pairs of guard-gates (formerly 3)	2	1
Number of locks { lift.....	26	25
{ guard.....	1	1
Dimensions.....	1 lock 270 x 45 1 lock 200 x 45 1 (tidal) 230 x 45 24 locks 150 x 26 ft. 6 in.	270 feet x 45 feet.
Total rise of lockage.....	326 $\frac{3}{4}$ feet.	326 $\frac{3}{4}$ feet.
Depth of water on sills.....	10 $\frac{1}{4}$ “	14 “
Construction commenced, 8 feet.....		1824
“ completed.....		1833
Enlargement commenced, 14 feet.....		1872
“ completed.....		1887



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## WELLAND RIVER BRANCHES.

## Length of canal—

Port Robinson cut to river Welland..	2,622 feet.
From the canal at Welland to the river, via lock at Aqueduct.....	300 “
Chippewa cut to river Niagara.....	1,020 “
Number of locks—one at Aqueduct and one at Port Robinson.....	2
Dimensions of locks.....	150 by 26½ feet.
Total lockage from the canal at Welland down river Welland.....	10 feet.
Depth of water on sills.....	9 “ 10 inches.

## GRAND RIVER FEEDER.

Length of canal.....	21 miles.						
Number of locks.....	2						
Dimensions of locks.....	<table><tr><td>1 of 150 by</td><td rowspan="3">} 26½ feet.</td></tr><tr><td>1 of 300 by</td><td>45 “</td></tr><tr><td></td><td>28 “</td></tr></table>	1 of 150 by	} 26½ feet.	1 of 300 by	45 “		28 “
1 of 150 by	} 26½ feet.						
1 of 300 by		45 “					
		28 “					
Total rise of lockage.....	10 feet						
Depth of water on sills.....	9 “						

## PORT MAITLAND BRANCH.

Length of canal.....	1¾ miles.
Number of locks.....	1
Dimensions of locks.....	185 feet by 45 feet.
Total rise of lockage.....	7 “
Depth of water on sills.....	7½ “

The Welland canal has two entrances from lake Ontario, at Port Dalhousie, one for the old, the other for the new canal.

From Port Dalhousie to Allanburg, 11¾ miles, there are two distinct lines of canal in operation, the old line and the enlarged or new line.

From Allanburg to Port Colborne, a distance of 15 miles, there is only one channel, the old canal having been enlarged.

From the head of the Welland canal there is a deep water navigation through lake Erie, the Detroit river, lake St. Clair, the St. Clair river, lake Huron and river St. Mary to the Sault canal, a distance of about 580 miles. From the Sault the distance through lake Superior to Port Arthur is 274 miles, and to Duluth 397 miles.

## SAULT STE. MARIE CANAL.

Construction commenced.....	1888
Opened for traffic.....	1895
Length of canal, between the extreme ends of the entrance piers.....	7,472 feet.
Number of locks.....	1
Dimensions of locks.....	900 “ by 60 feet.
Depth of water on sills (at lowest known water level).....	18 “ 3 inches.
Total rise or lockage.....	18 “
Breadth of canal at bottom.....	141 “ 8 inches.
Breadth at surface of water.....	150 “



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This canal has been constructed through St. Mary's island, on the north side of the rapids of the river St. Mary, and, with that river, gives communication on Canadian territory between lakes Huron and Superior. The masonry pier of the bridge carrying the Canadian Pacific Railway over the canal, which stood in the channel of the canal, forming an obstruction to navigation, has been removed; the swing now spanning the full width of the channel or prism of the canal.

## MONTREAL, OTTAWA AND KINGSTON.

This route extends from the harbour of Montreal to the port of Kingston, passing through the Lachine canal, the navigation section of the lower river Ottawa, and the Ottawa canals, to the city of Ottawa; thence by the river Rideau and the Rideau canal to Kingston, on lake Ontario—a total distance of 245½ miles.

After leaving the Lachine canal the works constructed to overcome difficulties of navigation are:—

*Ottawa River Canals.*

The Ste. Anne's lock.  
Carillon canal.

Grenville canal.  
Rideau canal.

The total lockage (not including that of the Lachine canal) is 509 feet (345 rise, 164 fall)—and the number of locks is 55.

The following table exhibits the intermediate distances from Montreal harbour:—

Sections of Navigation.	Interme- diate Distance.	Total Distance from Montreal.
	Miles.	Miles.
The Lachine canal.....	8½	23½
From Lachine to Ste. Anne's lock.....	15	23½
Ste. Anne's lock and piers.....	1	50
Ste. Anne's lock to Carillon canal.....	27	51
The Carillon canal.....	1	57
The Carillon to Grenville canal.....	6½	63½
The Grenville canal.....	5½	119½
From the Grenville canal to the entrance of Rideau navigation.....	56	245½
Rideau navigation ending at Kingston.....	120½	

## STE. ANNE'S LOCK.

Construction commenced.....	1814
“ completed.....	1816
Rebuilt of wood.....	1833
“ in masonry.....	1843

Old Lock.		New Lock.	
Length of canal.....	½ mile.	Length of canal.....	½ mile.
Number of locks.....	1	Number of locks.....	1
Dimensions of locks.....	190 x 45 feet.	Dimensions of locks.....	200 x 45 feet.
Total rise of lockage.....	3 feet.	Total rise of lockage.....	3 feet.
Depth of water on sills....	6 “	Depth of water on sills....	9 “



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This work, with guide piers above and below, surmounts the Ste. Anne's rapids between Ile Perrot and the head of the Island of Montreal, at the outlet of that portion of the river Ottawa which forms the lake of Two Mountains,  $23\frac{1}{2}$  miles from Montreal harbour.

### THE CARILLON CANAL.

Construction commenced.....	1819
“ completed.....	1833
Enlargement commenced.....	1871
“ completed.....	1877
Length of canal.....	$\frac{3}{4}$ mile.
Number of locks.....	2
Dimensions of locks.....	200 x 45 feet.
Total rise of lockage.....	16 feet.
Depth of water on sills.....	9 “
Breadth of canal at bottom.....	100 “
“ “ water surface.....	110 “

This canal overcomes the Carillon rapids.

From Ste. Anne's lock to the foot of the Carillon canal there is a navigable stretch of 27 miles, through the lake of the Two Mountains and river Ottawa.

By the construction of the Carillon dam across the river Ottawa the water at that point is raised 9 feet, enabling the river above to be used for navigation.

### GRENVILLE CANAL

Construction commenced.....	1819
“ completed.....	1833
Enlargement commenced.....	1871
“ completed.....	1887
Length of canal.....	$5\frac{3}{4}$ miles.
Number of locks.....	5
Dimensions of locks.....	200 x 45 feet.
Total rise of lockage.....	$43\frac{3}{4}$ feet.
Depth of water on sills.....	9 “
Breadth of canal at bottom.....	40 to 50 feet.
Breadth of canal at surface of water.....	50 to 80 “

This canal, by which the Long Sault rapids are avoided, is about 56 miles below the city of Ottawa, up to which point the river Ottawa affords unimpeded navigation.

### RIDEAU NAVIGATION.

Construction commenced.....	1826
“ completed.....	1832

The Rideau system connects the river Ottawa, at the city of Ottawa, with the eastern end of lake Ontario, at Kingston.

Length of navigation waters.....	$126\frac{1}{4}$ miles.
Number of locks going from Ottawa to Kingston.....	35 ascending, 14 descending.
Total lockage.. $457\frac{1}{2}$ feet.	$292\frac{1}{4}$ rise and $165\frac{1}{4}$ fall.



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Dimensions of locks.....	134 x 33 feet.
Depth of water on sills.....	5 feet.
Navigation depth through the several reaches.....	5 “
Breadth of canal reaches at bottom.....	60 “ in earth.
	54 “ in rock.
Breadth of canal at surface of water.....	80 “ in earth.

## PERTH BRANCH.

Construction commenced.....	1883
“ completed.....	1892
Length of canal.....	7 miles.
Number of locks.....	2
Dimensions of locks.....	134 feet x 33 feet.
Total rise of lockage.....	26 “
Depth of water on sills.....	5 “ 6 inches.
Length of dam.....	200 “
Breadth of canal at bottom.....	{ 40 “ in rock.
	{ 60 “ in clay.
Breadth of canal at surface of water.....	80 “

The Perth branch of the Rideau canal affords communication between Beveridge's bay, on lake Rideau and the town of Perth.

The summit level of the Rideau system is at upper lake Rideau, but several of the descending reaches are also supplied by waters which have been made tributary to them. The following description gives the source of supply:—

From the summit, the route towards Ottawa follows the Rideau river, and that towards Kingston follows the river Cataraqui. The supply of water for the canal is derived from the reserves given in detail below.

These may be divided into three systems, viz.:—

1. The summit level, supplied by the Wolfe lake system.
2. The eastern descending level to Ottawa, supplied by the river Tay system, discharging into lake Rideau.
3. The southwest descending level to Kingston, supplied by the Mud lake system formerly known as the Devil lake system, discharging into lake Openicon.

Lake Openicon receives the waters of Buck lake and Rock lake.

All these waters on the descending level, supplemented by those of lake Loughboro', flow into Cranberry lake, which, discharging through Round Tail outlet, forms the river Cataraqui. The river, rendered navigable by dams at various points, affords a line of navigation to Kingston.

## RICHELIEU AND LAKE CHAMPLAIN.

This system, commencing at Sorel, at the confluence of the rivers St. Lawrence and Richelieu, 46 miles below Montreal, extends along the river Richelieu, through the St. Ours lock to the basin of Chambly; thence by the Chambly canal, to St. Johns, and up the river Richelieu to lake Champlain. The distance from Sorel to the boundary line is 81 miles.

At Whitehall, the southern end of lake Champlain is entered, and connection is obtained with the river Hudson, by which the city of New York is directly reached. From the boundary line to New York the distance is 330 miles.



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The following table shows the distances between Sorel and New York:—

Section of Navigation.	Interme- diate Distance.	Total Distances.
	Miles.	Miles.
Sorel to St. Ours lock.....	14	14
St. Ours lock to Chambly canal.....	32	46
Chambly canal.....	12	58
Chambly canal to boundary line.....	23	81
Boundary line to Champlain canal.....	111	192
Champlain canal to junction with Erie canal.....	66	258
Erie canal, from junction to Albany.....	7	265
Albany to New York.....	146	411

### ST. OURS LOCK DAM.

Construction commenced.....	1844
“ completed.....	1849
Length.....	$\frac{1}{8}$ mile.
Number of locks.....	1
Dimensions of lock.....	200 feet by 45 feet.
Total rise of lockage.....	5 “
Depth of water on sills.....	7 feet at low water.
Length of dam in eastern channel.....	300 “
Length of dam in western channel.....	690 “

At St. Ours, 14 miles from Sorel, the river Richelieu is divided by a small island into two channels. The St. Ours lock is in the eastern channel.

There is a navigable depth in the Richelieu of 7 feet between St. Ours lock and Chambly basin, a distance of 32 miles.

### CHAMBLY CANAL.

Construction commenced.....	1831
“ completed.....	1841
Length of canal.....	12 miles.
Number of locks.....	9
Dimensions of locks:—	
Guard lock, No. 1, at St. Johns.....	122 feet.
Lift “ 2.....	124 “
“ “ 3, 4, 5, 6.....	118 “
“ “ 7, 8, 9 combined.....	125 “
Total rise or lockage.....	74 “
Depth of water on sills.....	$6\frac{1}{2}$ “
Breadth of canal at bottom.....	36 “
Breadth of canal at surface of water.....	60 “

From  $22\frac{1}{2}$  to  
24 feet wide.

This canal succeeds the 32 miles of navigable water between St. Ours lock and Chambly basin. The canal overcomes the rapids between Chambly and St. Johns.



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## TRENT CANAL.

The term 'Trent canal' is applied to a series of water stretches, which do not, however, form a connected system of navigation, and which, in their present condition, are efficient only for local use. By various works this local use has been extended, and by others, now in progress and contemplation, this will become a through route between lake Ontario and lake Huron.

The series is composed of a chain of lakes and rivers, extending from Trenton, at the mouth of the river Trent, on the bay of Quinte, lake Ontario, to lake Huron.

Many years ago the utilizing of these waters for the purpose of through water communication between lake Huron and lake Ontario was projected.

The course, as originally contemplated and modified, is as follows:—

Through the river Trent, Rice lake, the river Otonabee and lakes Clear, Stony, Lovesick, Deer, Buckhorn, Chemong, Pigeon, Sturgeon and Cameron to lake Balsam, the summit water, about 155 miles from Trenton; from lake Balsam by a canal and the river Talbot to lake Simcoe; thence by the river Severn to Georgian bay, lake Huron; the total distance being about 200 miles of which only about 15 or 20 miles will be actual canal.

The full execution of the scheme, commenced by the Imperial Government in 1837, was deferred. By certain works, however, below specified, sections of these waters have been made practicable for navigation, and the whole scheme is now being carried out. A branch of the main route, extending from Sturgeon lake south, affords communication with the town of Lindsay, and, through lake Scugog to Port Perry, a distance of 174 miles from Trenton.

The following table gives the distance of navigable and unnavigable reaches:

From Trenton, bay of Quinte to Nine Mile rapids:—

Nine Mile rapids to Percy landing.....	19½	9
Percy landing to Heeley's Falls dam.....	—	14½
Heeley's Falls dam to Peterborough.....	51¾	—
Peterborough to Lakefield.....	—	9½
Lakefield to a point across Balsam lake..	61	—
	<hr/> 132¼	<hr/> 33

Total distance, bay of Quinte to a point across Balsam lake 165½

From Sturgeon point on Sturgeon lake, 48¾ miles from

Lakefield, the branch through the town of Lindsay  
to Port Perry at the head of lake Scugog..... 27

The works by which the Trent navigation has been improved comprise canals, with locks and bridges, at Young's point, Burleigh rapids, Lovesick, Buckhorn rapids, Bobcaygeon, Fenelon falls and Rosedale; also dams at Lakefield, Young's point, Burleigh falls, Lovesick, Buckhorn, Bobcaygeon and Fenelon falls. By these works there is afforded communication between Lakefield, 9½ miles from Peterborough, and Balsam lake, the headwaters of the system; opening up a total of about 160 miles of direct and lateral navigation.

At Lakefield, 9½ miles from Peterborough, the dam at the head of the Nine mile rapids of the river Otonabee maintains navigation on Lake Katchewanoo up to Young's point.

At Young's point, 5 miles from Lakefield, the dam between Lake Katchewanoo and Clear lake controls the water level through Clear and Stony lakes up to the foot of the Burleigh canal.



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At Burleigh rapids, 10 miles from Young's point, a canal, about  $2\frac{1}{4}$  miles in length, passes the Burleigh and Lovesick rapids, and gives communication between Stony lake and Deer bay.

At Buckhorn, 7 miles from Burleigh rapids, there is a canal about one-fourth of a mile long.

At Bobcaygeon,  $15\frac{3}{4}$  miles from Buckhorn rapids, a dam, 553 feet long, controls the water level to Fenelon falls.

At Fenelon falls, 15 miles from Bobcaygeon, a canal about one-third of a mile in length connects Sturgeon lake with Cameron lake.

The following is a list of the locks, with their dimensions:—

1	Lock at Rosedale (maintained by the Ontario government), 100' x 30' x 4' 6" to 6' 6" depth water on mitre sill.		
2	Locks at Fenelon.....	134'x33'x5' 0" to 7' 6" deep water on mitre sill.	
1	“ Lindsay.....	134'x33'x5' 0" to 7' 6"	“ “
1	“ Bobcaygeon.....	134'x33'x5' 8" to 7' 0"	“ “
1	“ Buckhorn....	134'x33'x5' 0" to 9' 0"	“ “
1	“ Lovesick.....	134'x33'x5' 0" to 9' 4"	“ “
2	“ Burleigh.....	134'x33'x6' 0" to 8' 0"	“ “
1	“ Young's pt....	134'x33'x5' 0" to 14' 0"	“ “
1	“ Peterborough	134'x33'x5' 0" to 10' 0"	“ “
1	“ Hastings.....	134'x33'x7' 0" to 10' 6"	“ “
1	“ Chisholms....	134'x33'x5' 0" to 8' 6"	“ “

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ST. PETER'S CANAL, CAPE BRETON.

Construction commenced.....	1854
“ completed.....	1869
Enlargement begun.....	1875
“ completed.....	1881
Length of canal, about 2,600 feet.	
Breadth of water line.....	50 feet.
Lock.....	One tidal lock, 4 prs. of gates.
Dimensions.....	200 feet by 48 feet.
Depth of water on sills.....	18 feet at lowest water.
Depth through canal.....	19 “
Extreme rise and fall of tide in St. Peter's bay.....	7 “

This canal connects St. Peter's bay on the northern side of Cape Breton, Nova Scotia, with the Bras d'Or lakes. It crosses an isthmus half a mile in width and gives access to the Atlantic.

BEAUHARNOIS CANAL.

Construction begun.....	1842
“ completed.....	1845
Length of canal.....	12 statute miles.
Number of locks.....	9
Dimensions of locks.....	200 feet by 45 feet.
Total rise or lockage.....	$82\frac{1}{2}$ “
Depth of water on sills.....	9 “
Breadth of canal at bottom.....	80 “
Breadth of canal at water surface.....	120 “



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As the new Soulanges canal is now opened for navigation, the Beauharnois canal is abandoned for navigation purposes.

## EARLIER CANALS.

A system of three canals preceded the Beauharnois. These were:—

## COTEAU DU LAC CANAL.

Construction.....	1779
“ completed.....	1780

## SPLIT ROCK CANAL.

Construction commenced.....	1779
“ completed.....	1780

## CASCADE POINT CANAL.

Construction commenced.....	1782
“ completed.....	1783

The locks were 20 x 6 feet, and provided for a draft of 2 feet. In 1814 the work of widening them to 12 feet was begun, and finished in 1817.

Two canals were also constructed off Burlington bay, Ontario. They were:—

## BURLINGTON BAY CANAL.

Construction commenced.....	1825
“ completed.....	1832

## DESJARDINS CANAL.

Construction commenced.....	1826
“ completed.....	1837

Neither of these canals required locks. They have for many years been abandoned. The depth of water provided in the first instance was  $7\frac{1}{2}$  feet.







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